Issue 126
PS
1963 Series
THE PREVENTIVE MAINTENANCE MONTHLY
IF YOU'RE THE NEW RADIO OPERATOR... I THINK WE'D BETTER HAVE A TALK.
Will Eisner
Connie's RADIO OPERATORS CLASS THIS SESSION 0800
SPECIAL ARTICLE
KNOB TWISTERS
SEE PAGE 29

Have Urgent modification work orders got you and your equipment pinned down these days? You can't move, shoot or communicate because some Urgent MWO's are not applied?

Then, lend an ear and let's see what you can do about it.

You know, of course, that AR 750-5, Change 2, Para 41 says that equipment won't be operated if it needs to have an Urgent MWO applied.

OK. Regulations are regulations.

So, what do you do about it?

Scratch Sheets — One thing that puts your equipment back on the Go Board is if an MWO gets downgraded from Urgent to Normal. Keep an eye on the 310-Series Army Circulars. Hundreds of MWO's have been downgraded in recent months. They are in the Circulars numbered between 310-14 and 310-52. And more are coming.

Read the News—You can keep ahead of the pack by reading the latest news on what MWO's are out. Your DA Pamphlet 310-4 (Index) with its latest change is your guide. Also, the publications distribution centers put out weekly lists of new pubs. You'll find the very latest MWO's on these lists.

They're Off—They're On—If it's one for your echelon, apply it toot-sweet—soon as you get the kits. If it's for some higher echelon, get your request in to your support outfit. Be sure your own C. O. knows about your problem. He'll stir up a fuss, if necessary, so's you'll get whatever help you need to keep his unit's equipment ready to fight.

Yours Truly—Which all means that if you expect to keep your equipment combat ready with MWO's you've got to work hard and read a lot. Nobody will do either for you.

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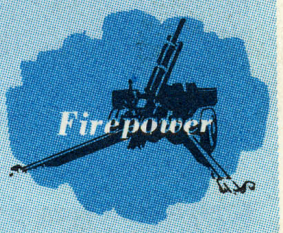

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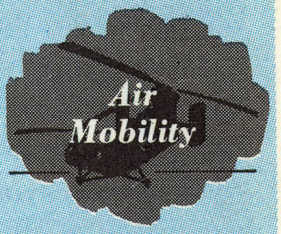

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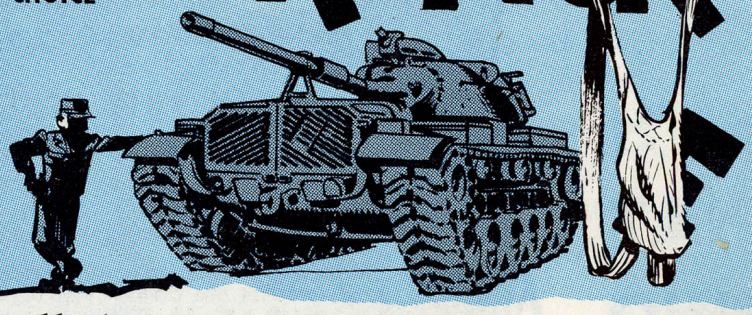
YA PAYS YOUR MONEY . . . AND TAKES YOUR CHOICE

RUPTUR



Yup, life gets easier all the time . . . it says here in small print.

F'rinstance—in this day and age of weapons with fixed head space—ruptured cartridge cases pop up few and far between.

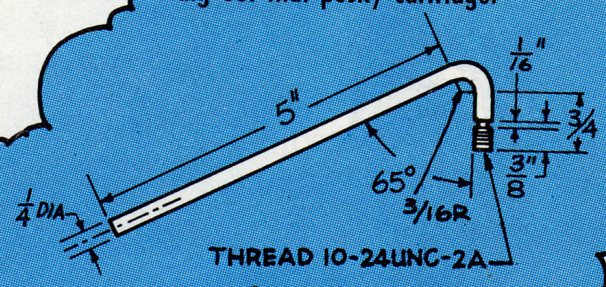
Still, if you run across one in the co-axial M73 7.62-mm machine gun mounted in your M60 tank, it's sorta comforting to know you've got a coupla three ways to get the culprit out. Right?

To begin with, if you're not the guy that all that anti-personnel fire is blasting away at—you could shove the ruptured cartridge case extractor into the breech of the gun—climb outside—and use your cleaning rod to ram out the bad cartridge along with the extractor.

How-so-ever, if the climate outside sorta suggests it'd be a pretty good idea to stay buttoned up, then you're down to two possibilities.

ONE—you can switch barrels quick like a bunny. (Watch your elevation—if it's too high the barrel'll drop free when you remove the receiver group . . . and you could end up with a mouthful of loose teeth.)

TWO—get your support to make you up this handy gadget to help dig out that pesky cartridge.



This gimmick looks like a bent piece of cleaning rod and is threaded on one end—so it screws into the base of the ruptured cartridge case extractor, like so—

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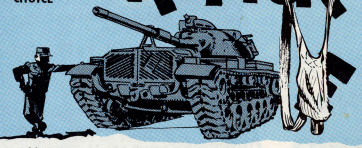

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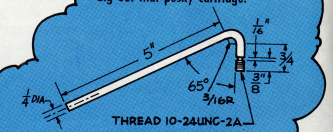

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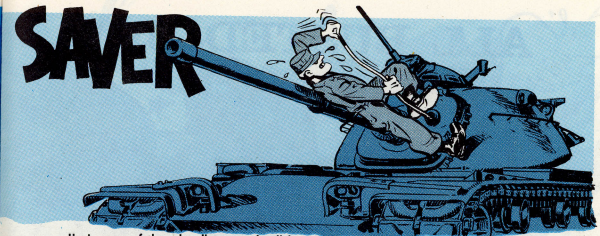
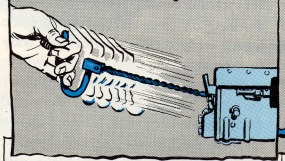
SAVER



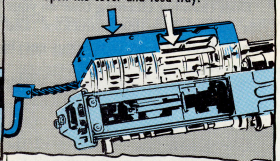
Having one of these handles around will let you remove a ruptured cartridge . . . without leaving your tank or disassembling the weapon.

All you've gotta do is:

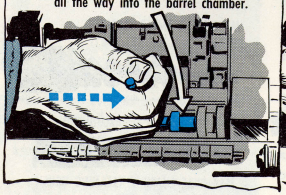
1. Yank back on the charger.



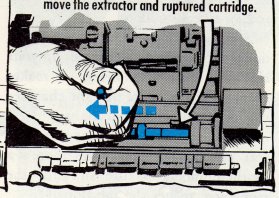
2. Open the cover and feed tray.



3. Shove extractor with the attached handle all the way into the barrel chamber.



4. Pull straight back on the handle to remove the extractor and ruptured cartridge.



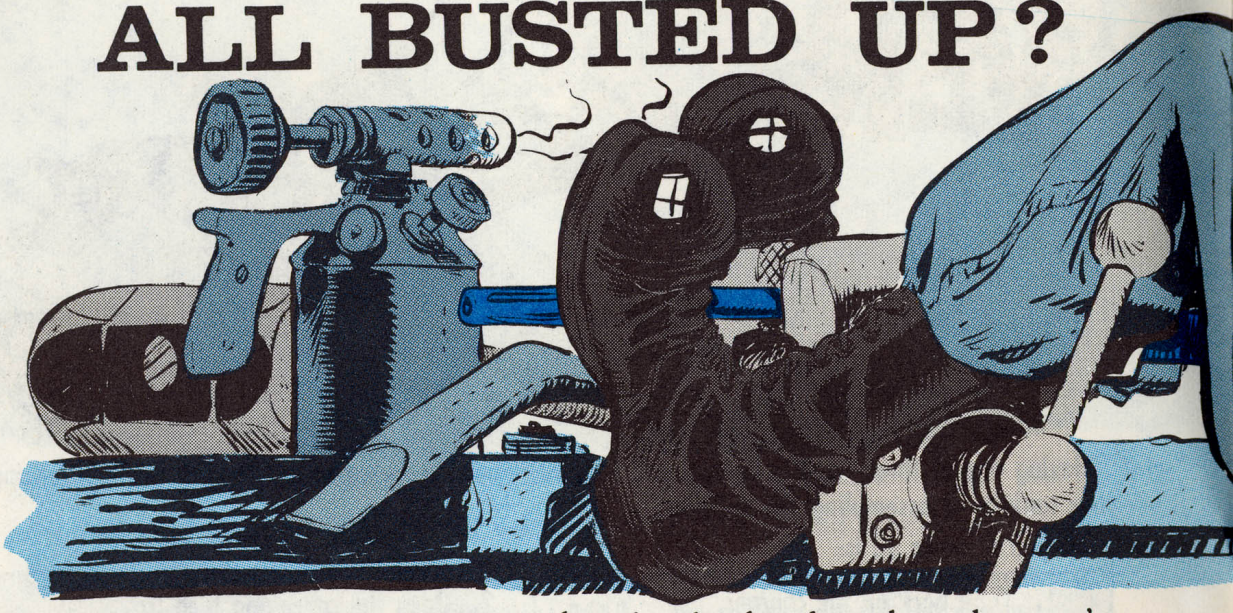
Remember one thing.

If you get the job done with the handle fix—it means you've got both barrels ready for action.

If you go for the barrel-switching routine—you've still gotta get that cartridge out before using the barrel again.

It simmers down to using whatever way suits you best. What counts is that you pick the one that gets the job done the fastest—the bestest . . . and the easiest.

ALL BUSTED UP?



Does chamber cleaning time on your rifle mean bleeding knuckles and busted brushes—or have you got it down pat?

Word has it that the getting out of the brush—more than the putting in—is causing boo-qoo problems.

Like getting the brush out of the chamber—without cracking the plastic ratchet head, bending the cleaning rod, or sweating blood.

And now, more than ever before, under the new system of cleaning your rifle only once after firing—it makes extra good PM sense that the chamber cleaning you do is done right.

So-o-o, to cut down on the wear and tear on men and machines, here's a by-the-numbers picture story of the right way to get the job done.

Putting the brush in is the same on both the M1 and the M14 rifles—so, except for the removal of the brush in the M1, all pictures show the M14 rifle.

The accent in this picture story is on the position of the hands and the chamber cleaning brush . . . but when you're working on your rifle, make sure the butt is wedged tight against your body for support.

Here's a close-up view of the M1 and M14 cleaning brushes compared to the ammo used in each rifle. You can see that the different size ammo means the brushes are different. Make sure you have the right one for your rifle.

M1 RIFLE CHAMBER CLEANING BRUSH (FSN 1005-691-1381)

M1 RIFLE, 30 CAL. AMMUNITION

M14 RIFLE CHAMBER CLEANING BRUSH (FSN 1005-690-8441)

M 14 RIFLE, 7.62MM AMMUNITION

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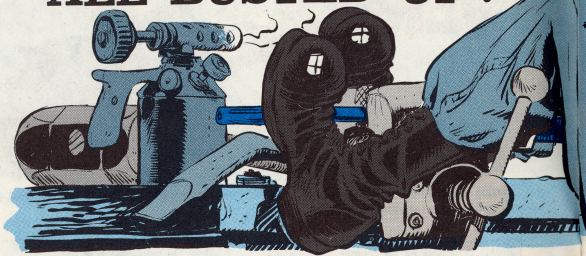

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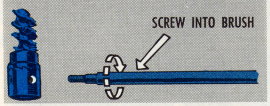
M14 RIFLE CHAMBER CLEANING BRUSH (FSN 1005-690-8441)

M 14 RIFLE, 7.62MM AMMUNITION

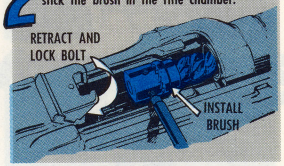
OK, put a couple of drops of bore cleaner on the brush, or in the chamber, to make things a little smoother and easier and let's go.

IN GOES THE BRUSH

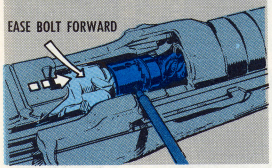
1 Screw the threaded end of cleaning rod section into the ratchet base of the brush. Be sure the threads are clean, undamaged and not cross-threaded.



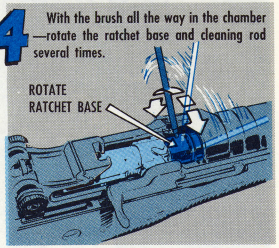
2 Pull the bolt to rear, lock it in place and stick the brush in the rifle chamber.



3 Release the bolt and ease operating rod and bolt forward, seating the brush in the chamber. **Don't let the bolt slam forward and jam the brush into chamber.**



4 With the brush all the way in the chamber—rotate the ratchet base and cleaning rod several times.



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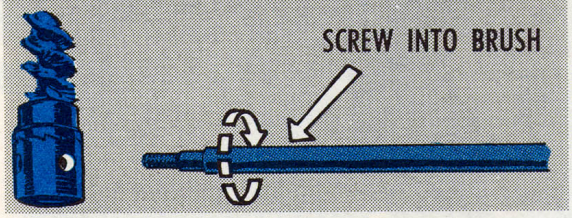

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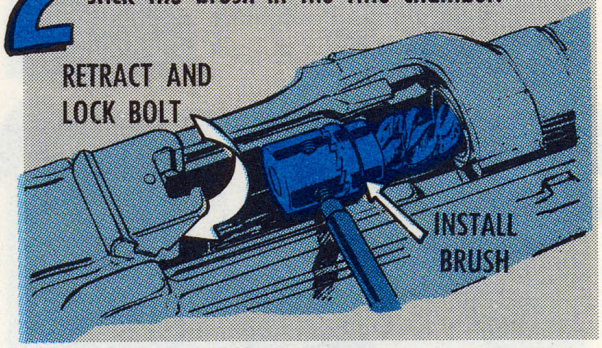

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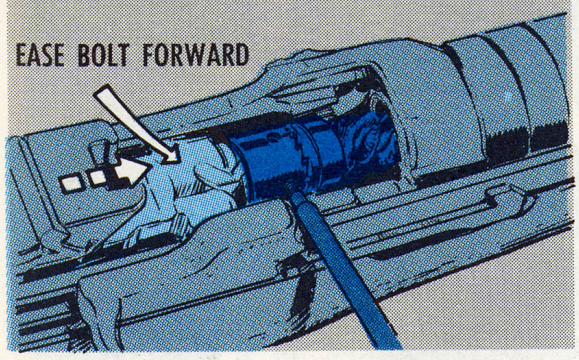

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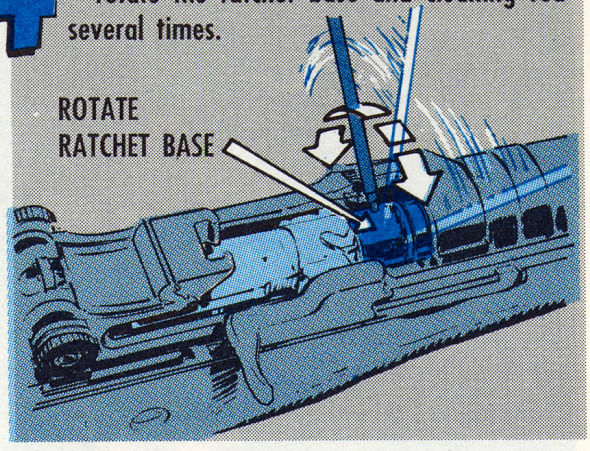
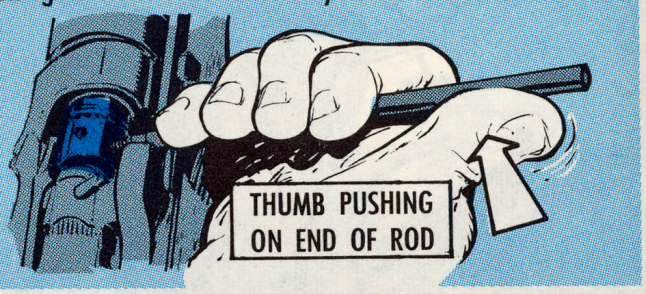


PS MORE

EXIT THE M14 BRUSH

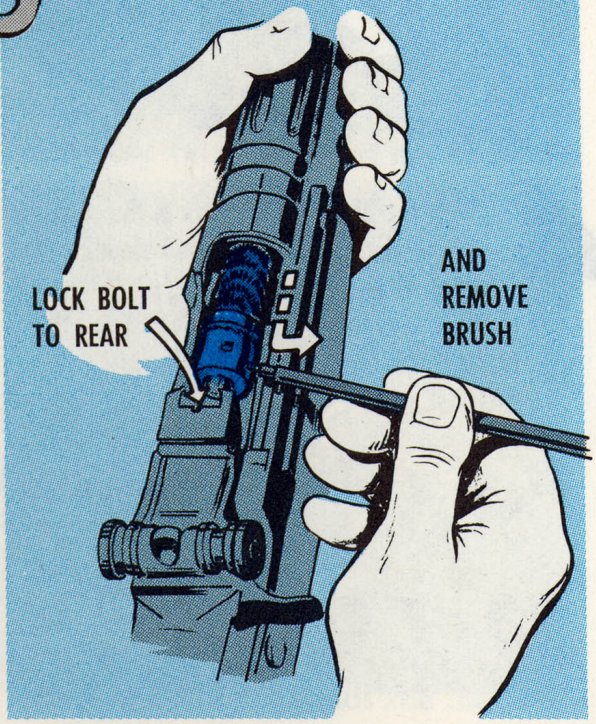
1 Removing the brush is where the operation gets a little on the tricky side. It can be done two ways on the M14. Here's the first method.

Wrap your fingers around the rod—as close to the receiver as you can—with your thumb extended and pushing against the opposite end of the rod. This grip gives you better leverage and cuts down on the chances of twisting the rod and brush.



2 Keep an even pressure on both ends of the cleaning rod (with your fingers pulling and thumb pushing) and pull to the rear, removing the brush from chamber while pushing the bolt and operating rod to rear at the same time.

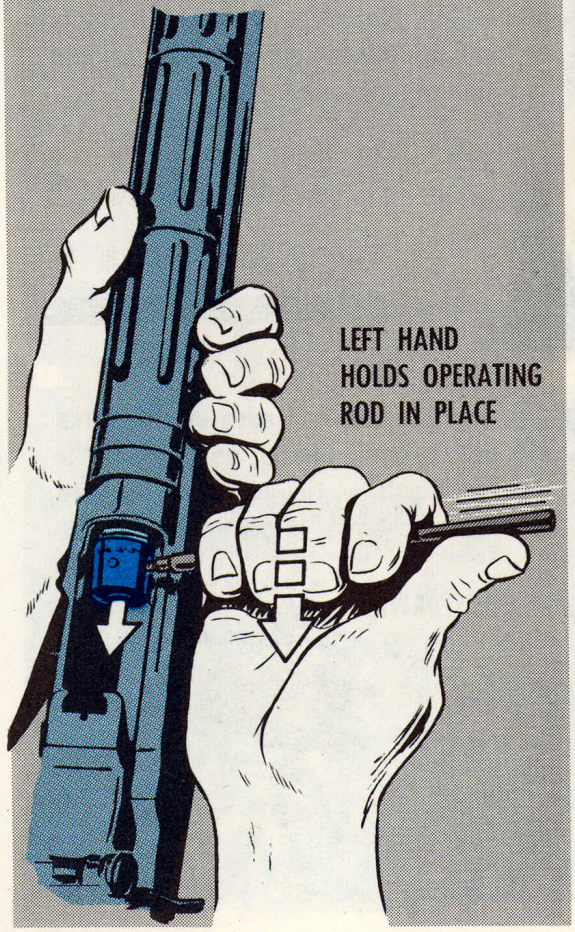
3 Lock the bolt to the rear and remove the brush from the receiver.



THE SECOND METHOD

The second way to get the brush out of the M14 goes like so.

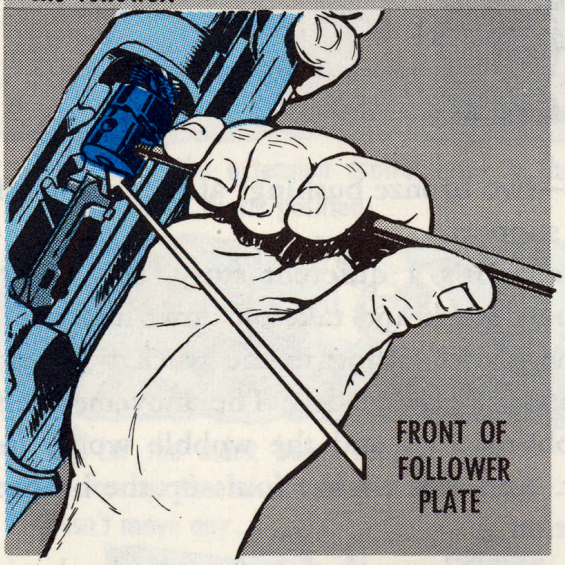
Pull the operating rod to the rear and lock it in place. Grab the cleaning rod as mentioned before and pull back as straight as possible. Your left hand wants to be wrapped around the stock to keep the operating rod from moving forward and to hold the rifle in place.



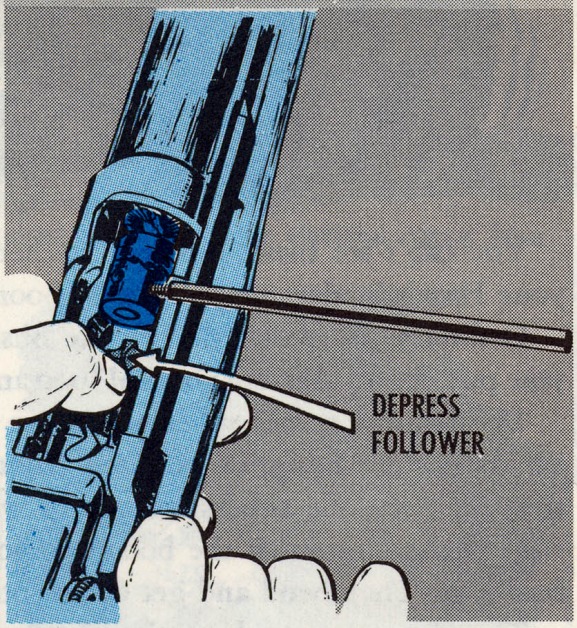
OUT WITH THE M1 BRUSH

Now—here's the way to remove the brush from the M1 rifle after the cleaning job is completed.

1 Draw the operating rod and bolt to rear until it's held in place by the operating rod catch. Grab the cleaning rod as mentioned before and pull the brush and cleaning rod back until the ratchet base hits the front of the follower.



2 Push down on the follower with your left thumb and **EASE** the operating rod forward with your right hand until the bolt touches the base of ratchet brush.

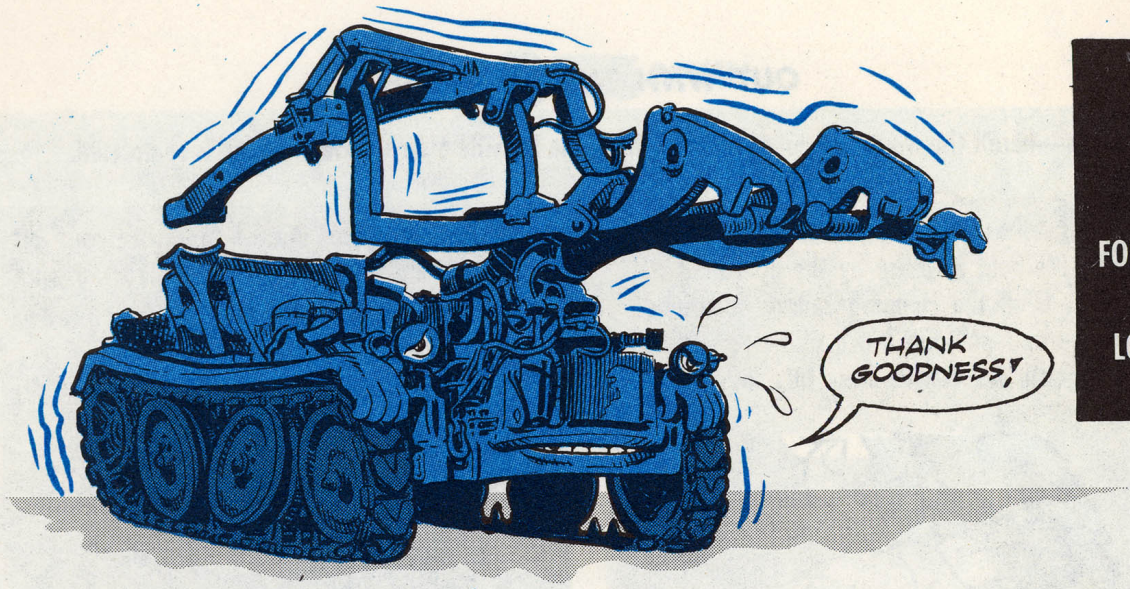


3 Draw the cleaning rod and brush to the rear against the hump in the operating rod. Then pull the chamber brush, cleaning rod, bolt and operating rod to the rear as a group until the brush is clear of chamber.

4 Hold the cleaning rod and brush all the way back with your right hand, lock the operating rod in place with your left hand, and take the brush from the receiver with your right hand.

That's it . . . run through the entire operation a couple of times and before you know it you'll be handing out instructions to the "recruits" in your outfit.

PS END



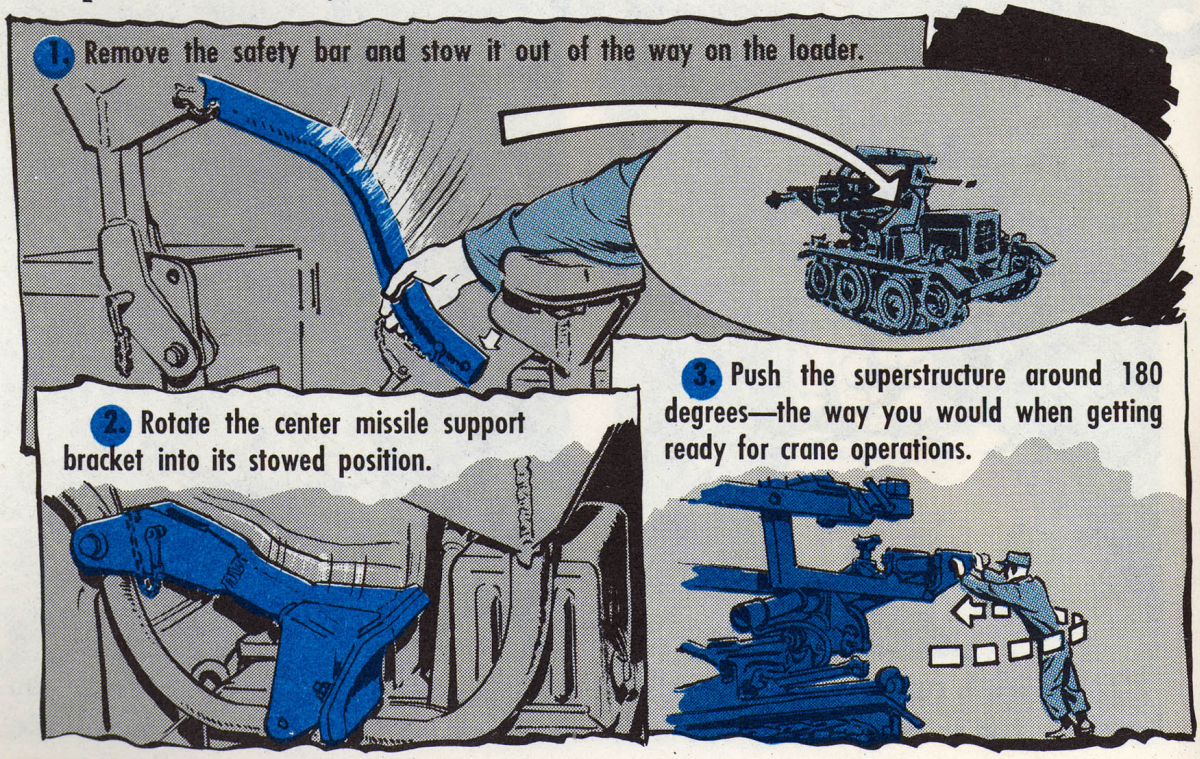
HERE'S SOME RELIEF FOR YOUR HAWK LOADER'S—

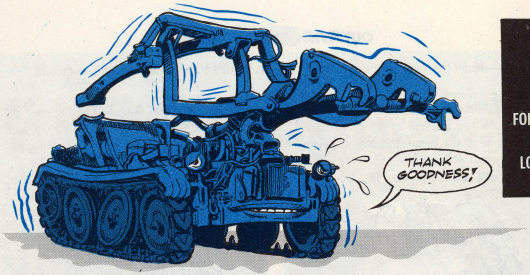
You can't see them, but they're there—two bronze bushings at the bottom of your Hawk loader superstructure boom support.

Ordinary use won't bother the bushings. It's a different story, tho, when you put the loader on your M36 transport truck and take off down the road.

The trouble comes when you have the loader sitting in the truck with the superstructure hanging over the front end of the loader. The movement of the truck sets the superstructure to wobbling . . . and the wobble works its way to the bottom of the boom support. And that's what fouls up the bronze bushings. They bend and get out of position.

There's a way to beat the problem . . . and you do it before the loader is run up on the truck. By the numbers:





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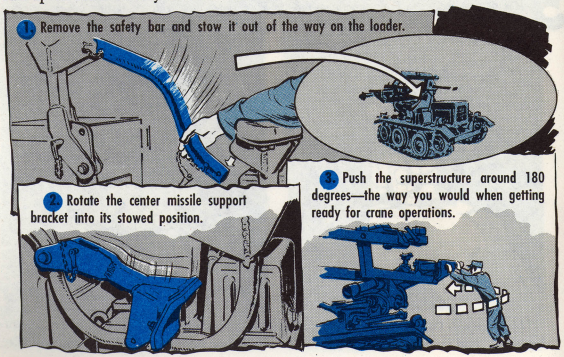
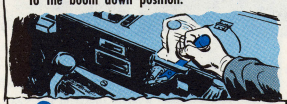
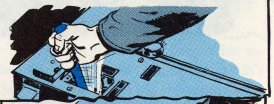


HERE'S SOME RELIEF FOR YOUR HAWK LOADER'S—

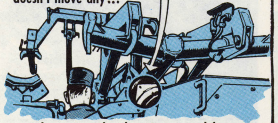
BUSHINGS

4. Move the extension control lever to the retract position and the elevation control lever to the boom down position.





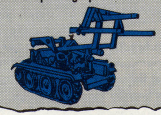
5. Let the index boom depress until it just touches the missile support frame and doesn't move any . . .

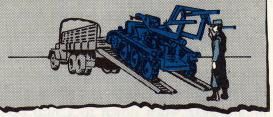


. . . then center the elevation control lever.

Now you want to pre-load by giving the elevation control lever a quick jab forward and moving it right back. (If you hold the lever forward too long, something might get a bad case of the "bends"—like f'rinstance the boom.)

The next thing to do is back the loader up onto the truck . . . put the crane accessories on the truck . . . and secure the loader to the truck bed with tie-downs. With the loader on the truck, de-energize everything but the hydraulic system pressure. You've got to have the pressure to keep things pre-loaded.

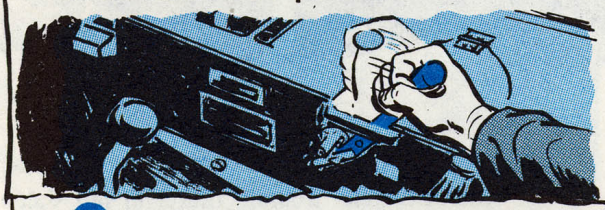


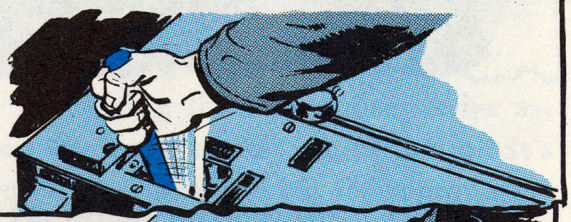


Don't let the hydraulic system pressure drop. If it does, the superstructure could take a beating while the loader is being carried down the pike. And if you can, check to see that the boom is pre-loaded every 24 hours of continuous travel.

BUSHED BUSHINGS

4. Move the extension control lever to the retract position and the elevation control lever to the boom down position.





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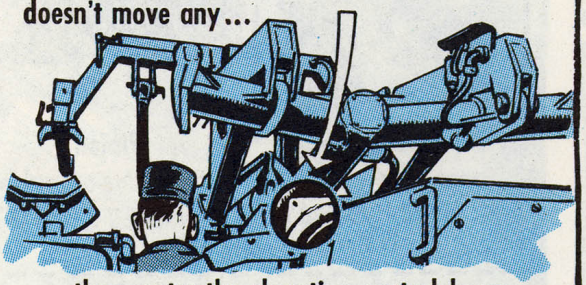

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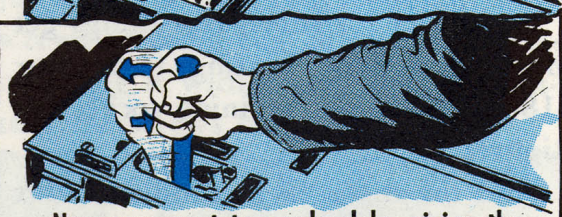

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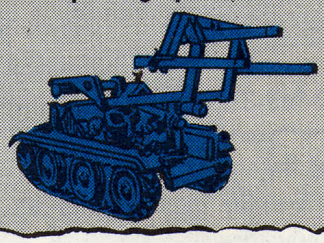

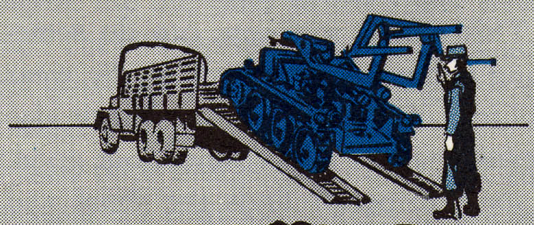

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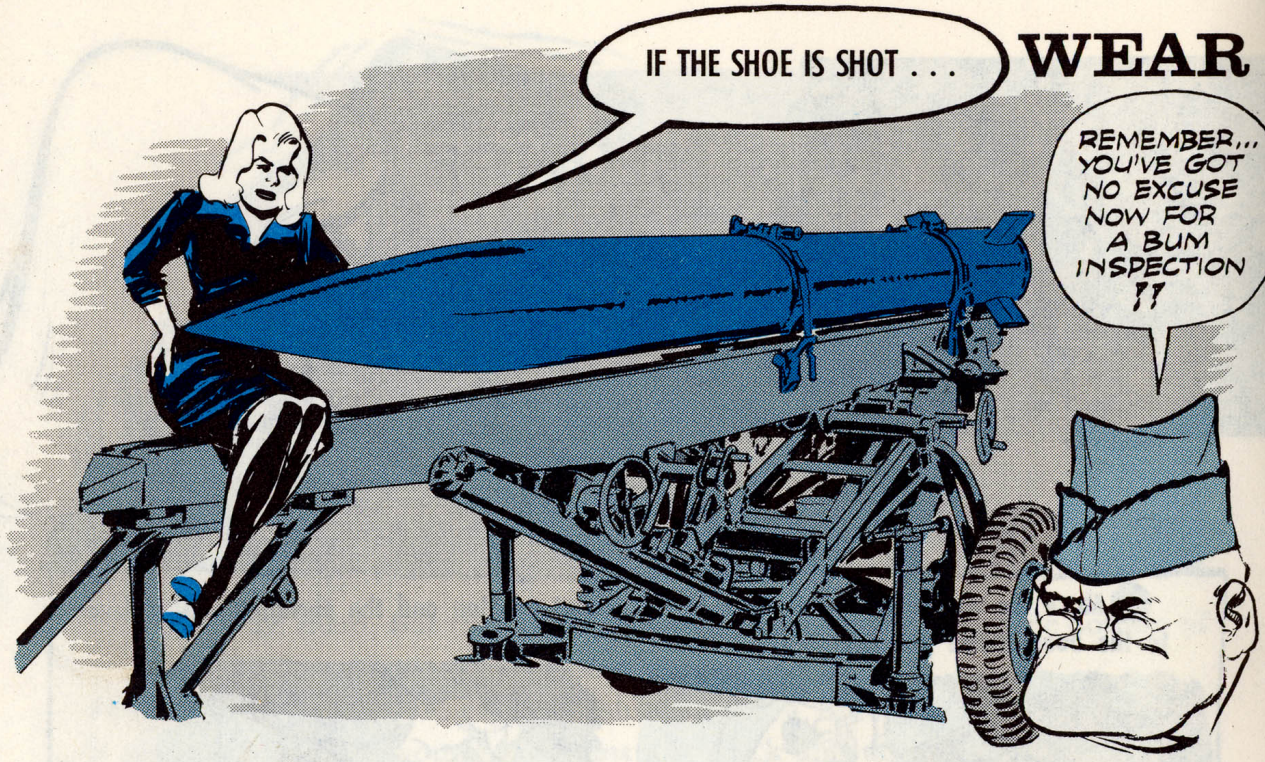
IF THE SHOE IS SHOT . . . WEAR



Here's the scoop—with pictures yet—that'll get you the parts you need to keep that Littlejohn training rocket in top shape.

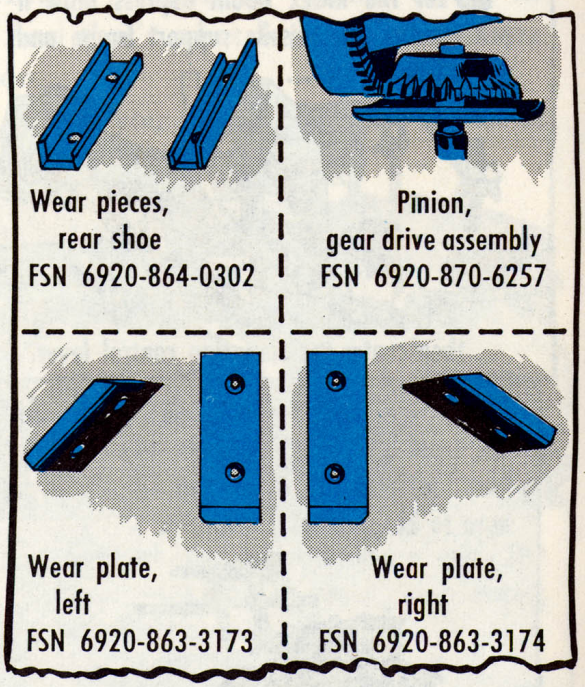
One thing for sure—few things get more of a daily beating than your 318-mm Littlejohn training rocket set. Right?

And the most likely candidates for top honors in the "beat parade" are the front and rear shoe assemblies and the pinion gear drive assembly. True?

So, what's like news about that?

Nothing—but this is: Wear pieces and plates for the shoes and extra pinion gears are now available to second echelon as authorized repair parts on an "as required" deal.

This means you now can do something about cutting down on the wear and tear of your rocket . . . . but, it also means you can get creamed, but good, if some inspector finds the shoes and pinion gear worn down to a nub because you failed to get and use the wear pieces and plates and a new pinion gear.



Wear pieces, rear shoe
FSN 6920-864-0302

Pinion, gear drive assembly
FSN 6920-870-6257

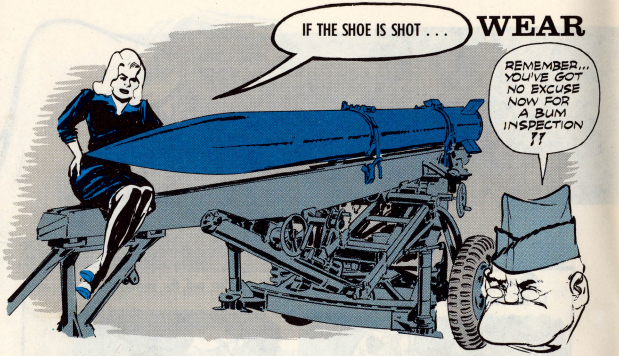
Wear plate, left
FSN 6920-863-3173

Wear plate, right
FSN 6920-863-3174

You get the screws to keep things together the same way by requisitioning 'em. Here's the FSN breakdown:

Screws (rear shoe)	FSN 5305-530-9778
Screws (front shoe)	FSN 6920-863-5610
Screws (pinion gear)	FSN 5305-151-0108

WEAR



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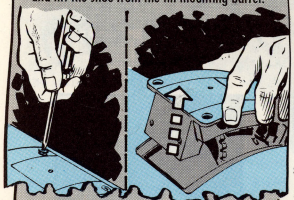
Screws (pinion gear)	FSN 5305-151-0108

(PIECE) IT

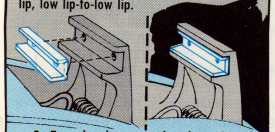
As far as putting these items on your rocket, it's a matter of minutes . . . minutes that'll save you hours of headaches.

On the rear launching shoe, handle the wear pieces and plate like so:

1. Remove the rear shoe attaching screws and lift the shoe from the fin mounting barrel.

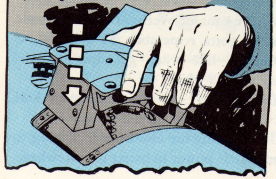


2. Wedge the shoe open and fasten one wear piece to the shoe track—high lip-to-high lip, low lip-to-low lip.



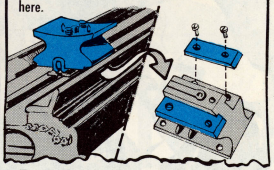
3. Turn the shoe around and match and fasten the second wear piece to the other shoe track.

4. Replace the shoe on the barrel—with the arrow on the under side of the shoe pointing to the rear of the rocket.

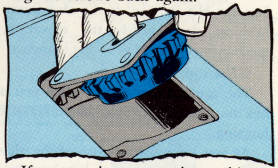


Putting the left and right wear plates on the front launching shoe is even easier.

All you have to do is remove the shoe from the rocket, flip it over and screw the right and left plates in place . . . like it shows here.



Replacing the pinion gear drive assembly is the easiest job of the lot. It's just a case of removing the pinion gear screws—tossing out the worn gear—replacing it with a new unit and putting the screws back again.



If you run into any major problems on replacing the wear pieces—like maybe the old ones in the shoes have been chewed up so bad you can't get 'em out—get your support to give you a hand.

But, once things are ship shape, remember it's your job to keep an eye on the wear pieces, plates and pinion gear and to replace them as often as need be—before they get so bad that you've got to yell for help.

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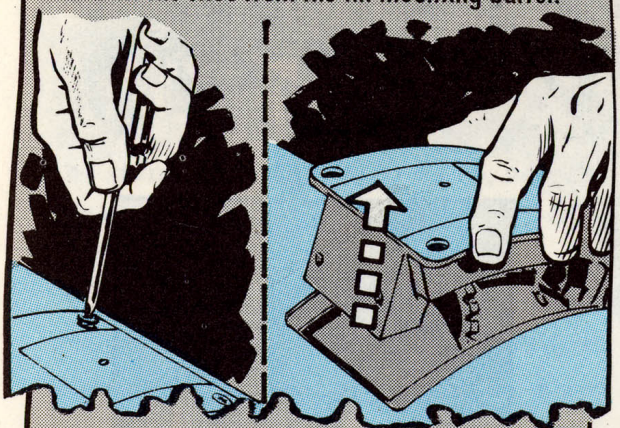

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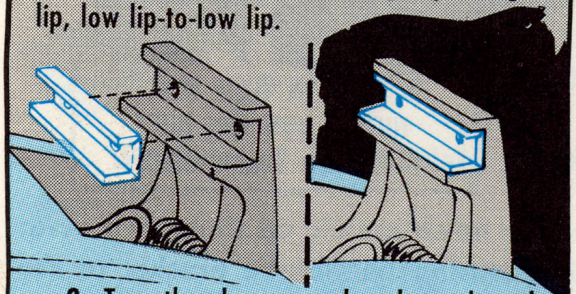

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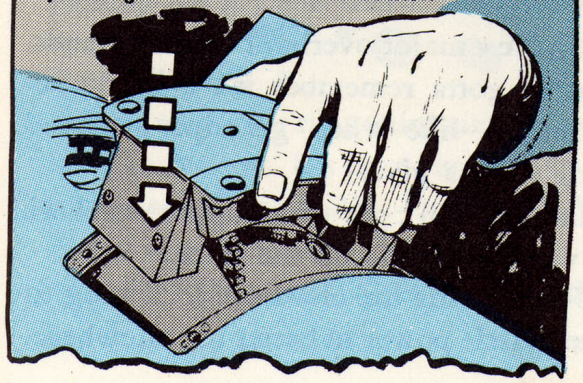

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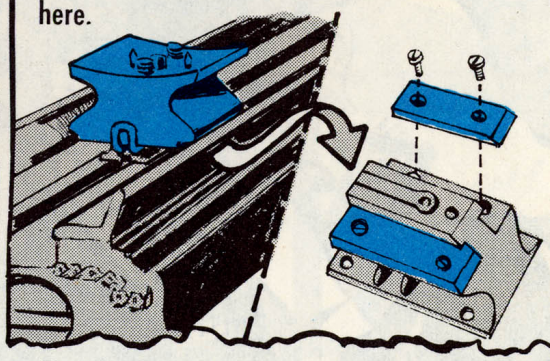

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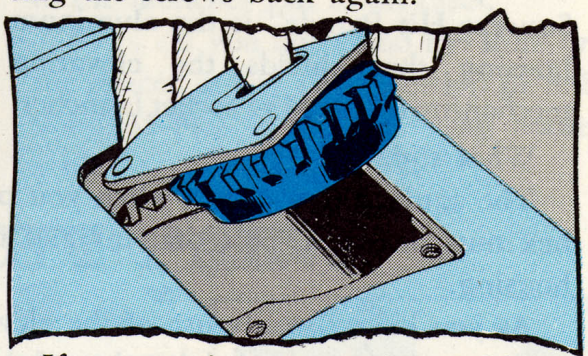

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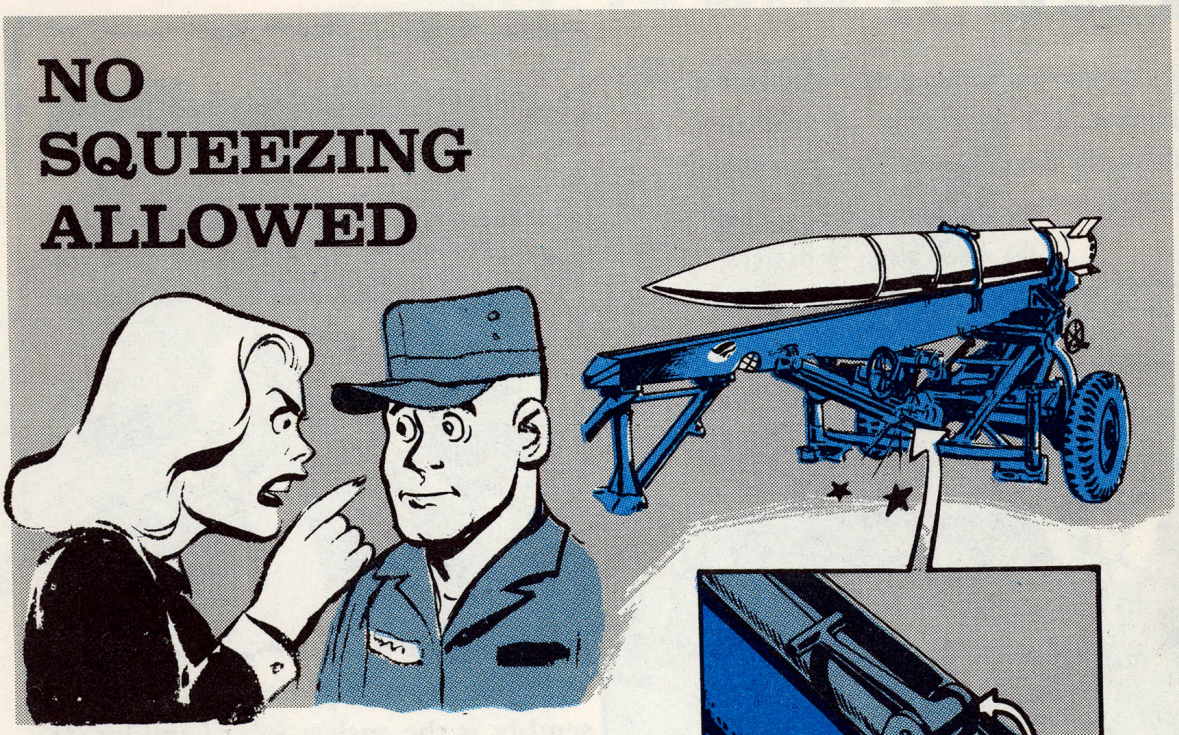

EASY ON THESE HEX NUTS — YOU CAN HURT ALUMINUM TUBING BELOW

Some things are built to be squeezed . . . and some aren't.

And, as far as you Littlejohn jockeys are concerned, No. 1 on the "Don't Squeeze Hit Parade" is the aluminum housing that shields the elevating mechanism on the M34 rocket launcher.

What squeeze?

The squeeze that comes when you put too much muscle on those two ¼-in hex nuts on the U-bolt that marries the elevating handbrake bracket to the housing.

As you know, steady use of the elevating brake leads to loosening of the U-bolt . . . which leads to tightening of the nuts . . . which can lead to real trouble.

Trouble because—if you're not on the ball—you can easily overdo the tightening bit, causing the U-bolt to dig into the shield and scoring the elevating tubes underneath.

If this happens . . . your support people have a major overhaul on their hands.

When you lean into that wrench, you've gotta remember it's a battle between steel, elbow grease and aluminum—like when grandpa strapped grandma in her corset—the softest thing's gotta give.

So-o-o, if your U-bolt shakes loose, and you can't get your support to check it out in a hurry, go real slow and easy when you take up the slack.

Tighten both nuts evenly until the U-bolt holds the elevation lock snug to the housing—then call it quits and put the muscle power to better use elsewhere.

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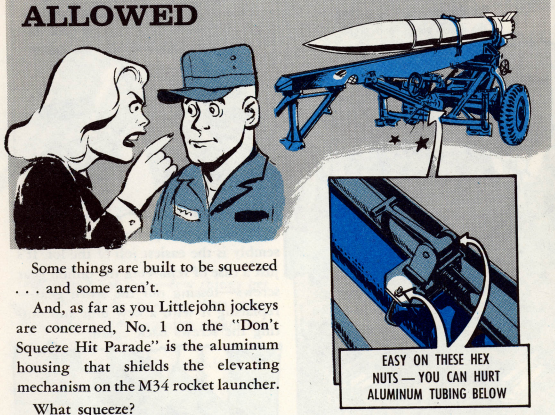

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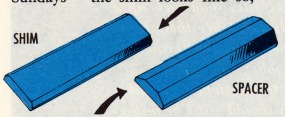
Tighten both nuts evenly until the U-bolt holds the elevation lock snug to the housing—then call it quits and put the muscle power to better use elsewhere.

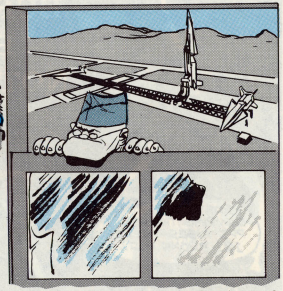
OUT MIT 'EM

That's the good news on two of the heavier items in your Nike special organizational maintenance shop sets—the shim, FSN 4935-620-8138, and the forward spacer plate, FSN 4935-611-7127.

Just to jog your memory—in case you haven't used them in a month of Sundays— the shim looks like so,—



and the forward spacer plate is this gadget.



Both items were supposed to be used in place of the launching rail to make adjustments on the wedge locks. However, the word is that better and more accurate results can be made by sticking to the launcher rail in all cases.

So . . . if you don't find the shim or the spacer in the latest edition of SM 9-4-4935-No. 1, you can clean house a bit.

TAIN'T THE PAINT

Dear Half-Mast,

Say . . . when are they going to add gray enamel to Ord Y6-1 so we can spot-paint the consoles and test equipment at our Nike site? The stuff I'm looking for is Color 1610, FSN 8010-297-2092.

CWO R. P.

Dear Mister R. P.,

You won't see that paint since it's no longer used in Nike systems. It's been replaced by Enamel, Gray Lusterless, Color 36231. Ord 7 SNL Y4-6 (Apr 62) shows that FSN 8010-844-0872 gets you a pint can . . . and FSN 8010-297-0802 is worth a gallon can.

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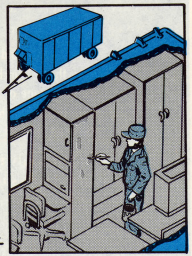

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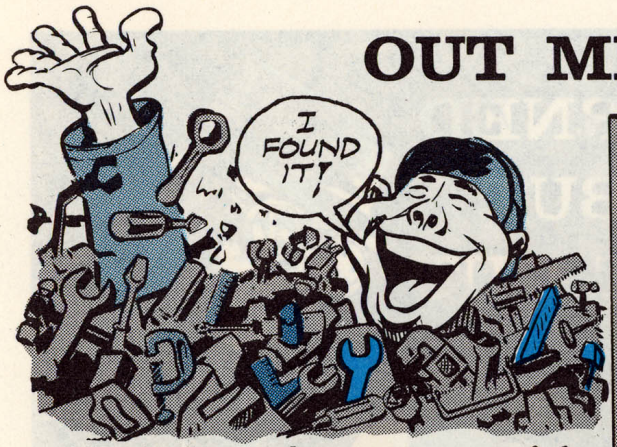

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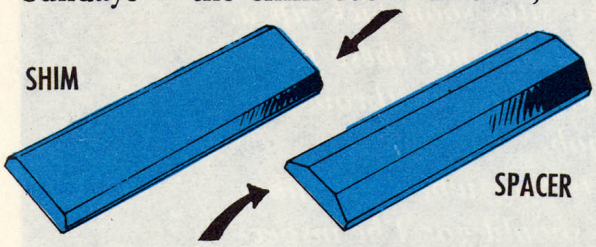

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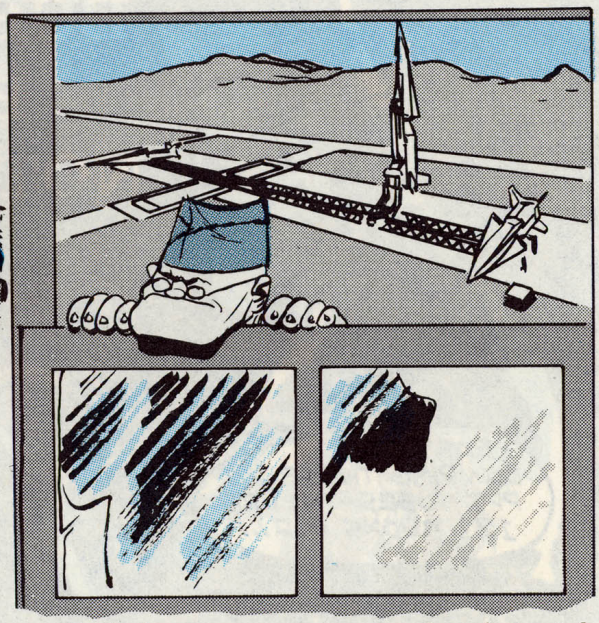

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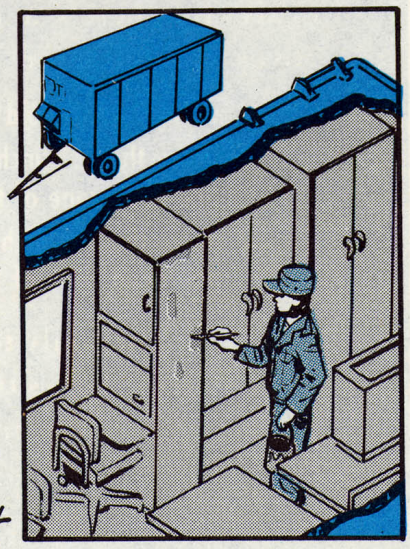
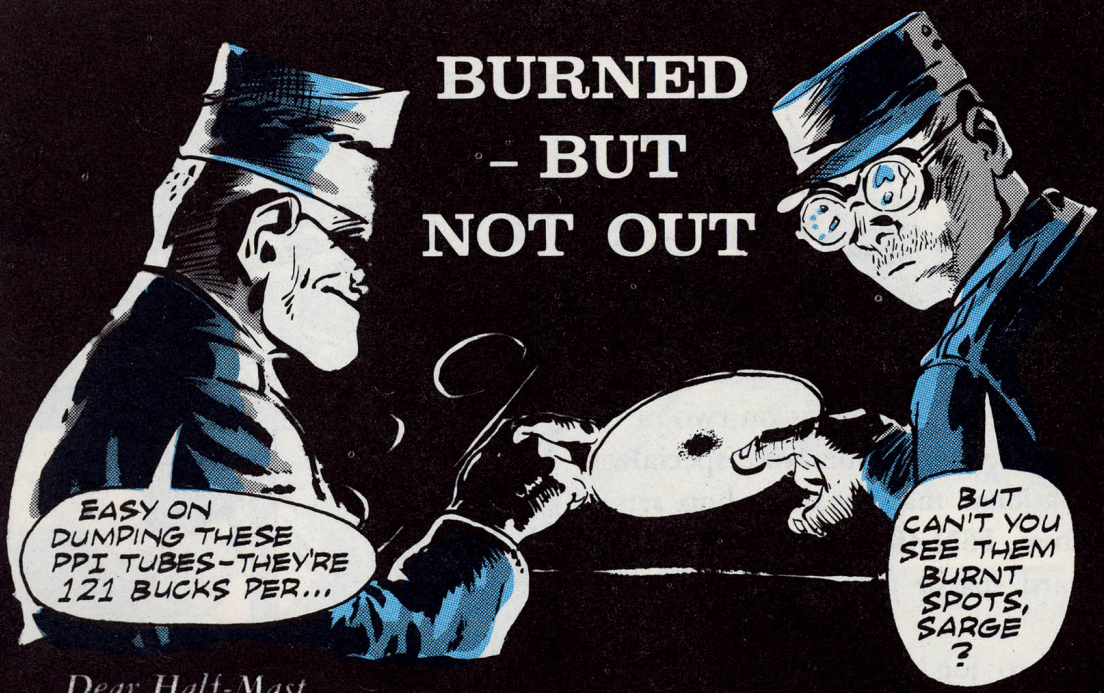


BURNED – BUT NOT OUT



Dear Half-Mast,

As you know, these PPI tubes for the acquisition antenna in the BC van at our Nike sites soon pick up a burned spot from the ground clutter. Since these tubes are sorta expensive ($121), we don't like to throw 'em away while they can still do the job.

Is there any sure-fire way of telling when the tubes are still usable . . . and when they should go? The inspectors take a mighty dim view of these spots.

SFC T. S.

Dear Sergeant T. S.,

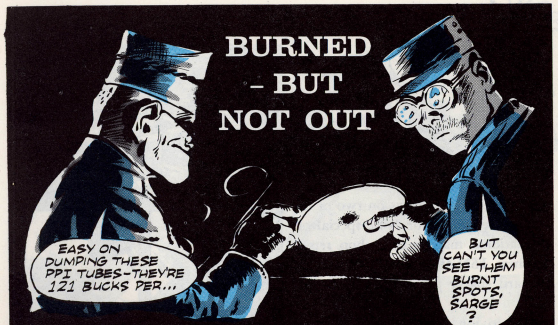
This has always been one of those ". . . situation and terrain" deals. But here's a little rule-of-thumb that should just about cover the situation.

The tube should not be replaced unless the burned area is:

1. **More than 1/2 inch long through the center—when the burn is within the dead zone of the radar; or**
2. **More than 1/4 inch long through the center—when the burn is outside the dead zone of the radar.**

This applies only to tubes that're in use in a tactically emplaced Nike system. Tubes that're not being used tactically should **not** be replaced for ion burns — no matter how large.

Half-Mast



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Dear Sergeant T. S.,

This has always been one of those ". . . situation and terrain" deals. But here's a little rule-of-thumb that should just about cover the situation.

The tube should not be replaced unless the burned area is:

1. **More than ½ inch long through the center—when the burn is within the dead zone of the radar; or**
2. **More than ¼ inch long through the center—when the burn is outside the dead zone of the radar.**

This applies only to tubes that're in use in a tactically emplaced Nike system. Tubes that're not being used tactically should **not** be replaced for ion burns—no matter how large.

Half-Mast

MISSILE FUEL HANDLERS . . .

Peas in a pod—safety, common sense and good PM. One's as important as the other in handling liquid missile fuels.

Which is why you have to wear protective equipment when you handle these fuels—why you have to decontaminate it when you're through—and why you have to keep it in shape to go on protecting you in the future.

And, just as important, you have to know what first aid treatment you'll need if you accidentally get any of the toxic stuff on you. These poisons play for keeps.

KNOW THE SCORE

All the basic fuels used by Nike-Ajax, Corporal and Redstone missiles are dangerous—make no mistake about that!

All of 'em bite in some way. Red fuming nitric acid (RFNA) vapors will attack your lungs and burn you. Unsymmetrical dimethyl-hydrazine (UDMH) will go after your heart. M3 propellant mixture, which is 17 percent UDMH, will give you liver trouble. Hydrogen peroxide will burn you.

What makes it worse is that these poisons can build up in your system a little bit at a time unless you're real careful. That's why the medics have to check you out regularly.

Now, some of these fuels are dangerous to handle even if they're in sealed containers. Others are dangerous only after the container's been opened.

You need full protection when handling open containers and when there's danger of spills, splashes and spray—coveralls, cooling suit, hood, boots, gloves and breathing apparatus. These'll protect you all over.

(PS) MORE

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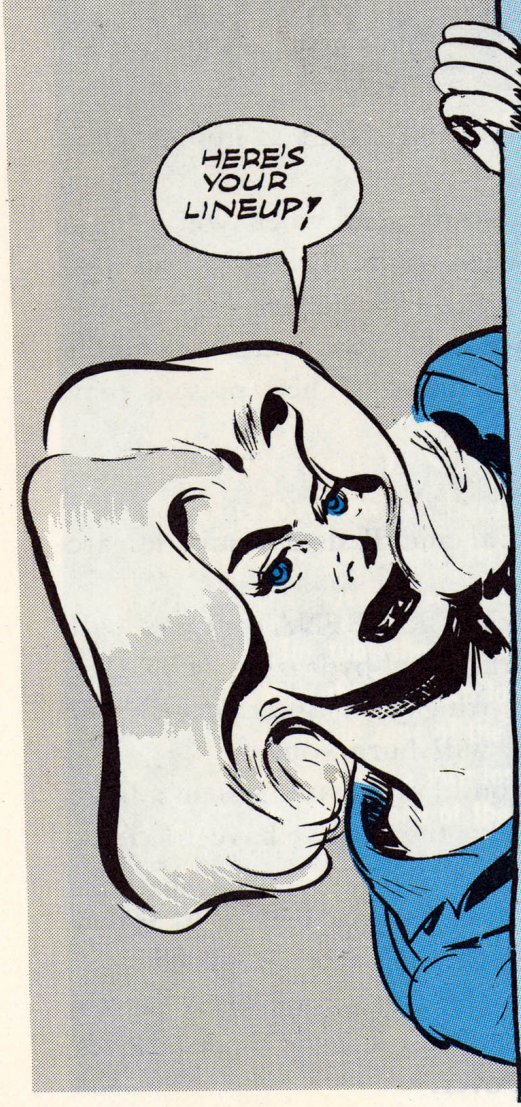
PS MORE

For limited protection when handling closed containers you probably can get by with your apron, hood, boots and gloves. But let your SOP or safety officer be your guide.

Here's a chart that tells you what protection you must wear in each case.

Paste it where all the men in your outfit can see it.



								LIMITED PROTECTION	
									Face Shield
								Apron & Hood	
							M13, M15 Breathing Apparatus		M13 — FSN 4240-217-1094 M15 — FSN 4240-715-5134
						M21 Gas Mask			4240-723-5472 (small) 4240-723-5471 (med) 4240-723-7490 (large)
					Gloves, Rocket Fuel Handler's				Green — 8415-264-3598 Red — 8415-264-3599
				C8415-SL, Coveralls, Cooling, Rocket Fuel Handler's					8415-272-3013 thru -3021
				Coveralls, Rocket Fuel Handler's					8415-272-3004 thru -3012
			C8415-SL, Cover, Cooling, Rocket Fuel Handler's Hood						8415-264-1488
			Hood, Rocket Fuel Handler's						8415-276-7624
			Boots, Knee, Rubber.						8430-262-8253 thru -8261 and 8430-262-8278
FULL PROTECTION									

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	FULL PROTECTION								LIMITED PROTECTION		
	Boots, Knee, Rubber.	Hood, Rocket Fuel Handler's	C8415-SL, Cover, Cooling, Rocket Fuel Handler's Hood	Coveralls, Rocket Fuel Handler's	C8415-SL, Coveralls, Cooling, Rocket Fuel Handler's	Gloves, Rocket Fuel Handler's	M21 Gas Mask	M13, M15 Breathing Apparatus	Apron & Hood	Face Shield
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	8430-262-8253 thru -8261 and 8430-262-8278									
IN SEALED CONTAINERS:										
RFNA	—	—	—	—	—	X	—	—	X	X
ETHYL ALCOHOL	—	—	—	—	—	—	—	—	—	—
M-3	—	—	—	—	—	X	—	—	X	—
LIQUID OXYGEN	—	—	—	—	—	—	—	—	—	—
UDMH	—	—	—	—	—	X	—	—	X	—
LIQUID NITROGEN	—	—	—	—	—	—	—	—	—	—
HYDROGEN PEROXIDE	—	—	—	—	—	—	—	—	—	—
IN OPEN CONTAINERS:										
RFNA	X	X	X	X	X	X	—	X*	X***	—
ETHYL ALCOHOL	**	—	—	—	—	—	—	—	X***	X
M-3	X	X	X	X	X	X	—	X	X***	—
LIQUID OXYGEN	X	X	X	X	X	X	—	X	X***	X
UDMH	X	X	X	X	—	X	—	—	—	—
LIQUID NITROGEN	—	X	—	—	—	—	—	—	—	—
HYDROGEN PEROXIDE	X	—	—	X	X	X	—	X	X***	—

*M13 is OK for RFNA fueling in Corporal units.

**Non-sparking shoes.

***Limited protection equipment may be used for certain operations at the discretion of the Safety Officer.

MORE

IN SEALED CONTAINERS:

RFNA	—	—	—	—	—	X	—	—	X	X
ETHYL ALCOHOL	—	—	—	—	—	—	—	—	—	—
M-3	—	—	—	—	—	X	—	—	X	—
LIQUID OXYGEN	—	—	—	—	—	—	—	—	—	—
UDMH	—	—	—	—	—	X	—	—	X	—
LIQUID NITROGEN	—	—	—	—	—	—	—	—	—	—
HYDROGEN PEROXIDE	—	—	—	—	—	—	—	—	—	—

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ETHYL ALCOHOL	**	—	—	—	—	—	—	—	X***	X
M-3	X	X	X	X	X	X	—	X	X***	—
LIQUID OXYGEN	X	X	X	X	X	X	—	X	X***	X
UDMH	X	X	X	X	X	X	—	X	—	—
LIQUID NITROGEN	—	X	X	—	—	—	—	—	—	—
HYDROGEN PEROXIDE	X	—	—	X	X	X	—	X	X***	—

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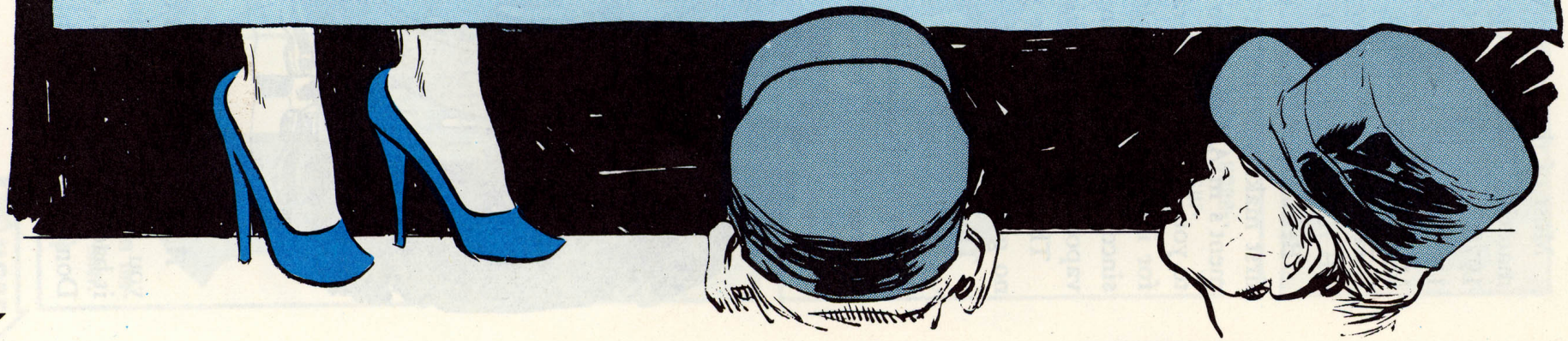
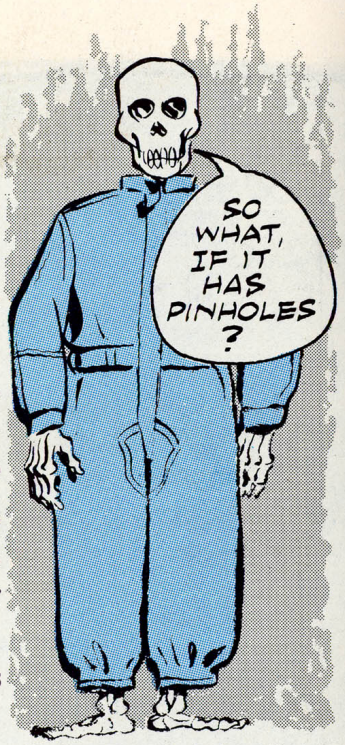


PS MORE

Most of the protective clothing is made of vinyl-coated material. For full dope on its use and care, study TM 9-1970-2 (Feb 58) plus Change 6 (25 May 62), TM 9-5056-12 (Sep 59), TB QM 97 (4 Sep 59) and TB 10-277 (17 Mar 55) plus Change 1 (18 Nov 60).

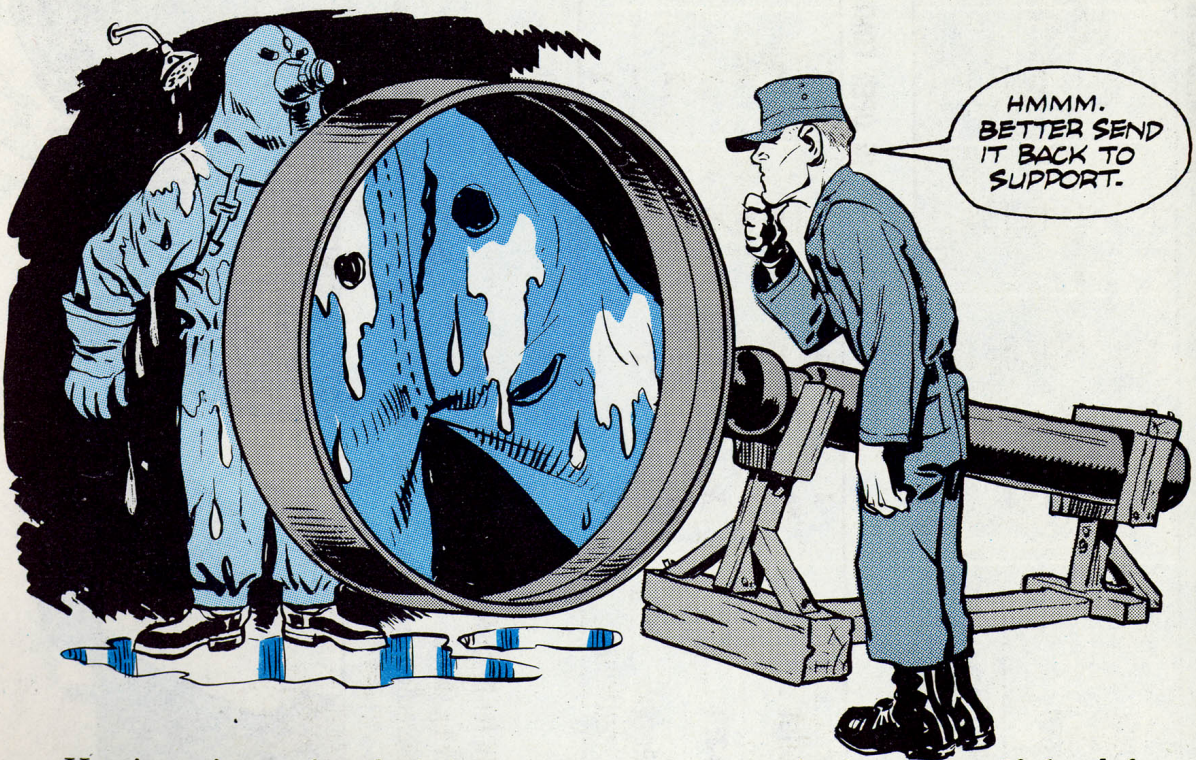
However, if you've got butyl-coated equipment, use TB 10-278 (1 Jun 60).



Before putting on your protective clothing, though, first make sure it's fit to do the job. Unless your equipment's in A-1 shape to start with, it won't be much help to you. A pair of coveralls with even a pinpoint hole in it, for instance, can be almost as bad as no coveralls at all, since it might trap some of that dangerous liquid agent or vapor against your skin.

The item must give you the protection intended or it's no good.

There're two good ways to check out your equipment before using it. Use 'em both. The first is to use the buddy system for eyeballing suits as they're put on. The second is to go into the deluge shower for three minutes or so after you're dressed. This'll show up even the pinpoint holes that are so dangerous.



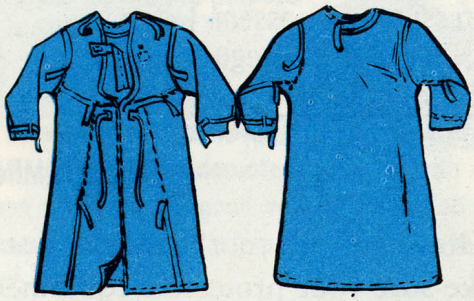
Here's an inspection deal that's made to order for both systems. If the defect you find here is in **blue** type, you'll know the item's not fit for duty. So, send it back to support. But, don't—nyet!—wear it till **all** the defects have been fixed. Don't play footsy with Lady Luck!

BOOTS—**Ripped, badly worn, fabric shows.**

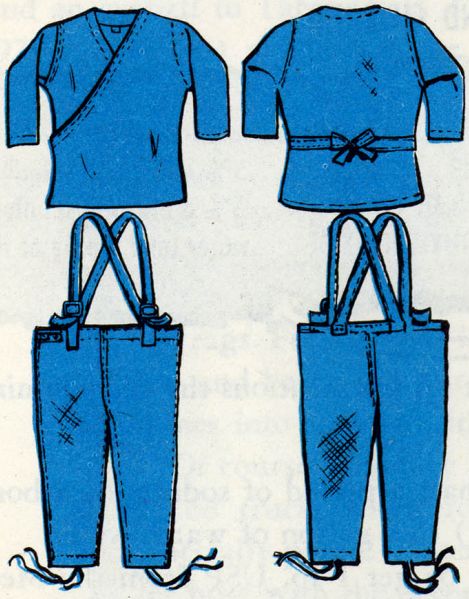
COVERALLS—Loose tape, **unsemented seams, surface badly ripped, badly worn, fabric shows;** slide fasteners won't work; **rubber lip doesn't cover slide all over;** metal slide fastener is not completely covered.

Lube those zippers now 'n' then to keep 'em sliding smoothly. But don't use graphite or vaseline. Instead, get hold of a "zipper stick" (Lubricant for zippers, stick form . . . FSN 9150-J28-0001) from your QM Laundry unit or the Mobility Support Center, Columbus, Ohio.

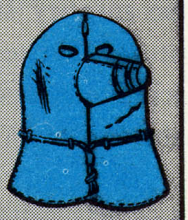
APRON—**Loose tape, unsemented seams, coating surface badly ripped, badly worn, fabric shows;** drawcord missing; slide buckles missing; webbing badly worn.

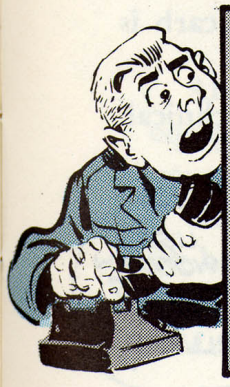


SUIT, COOLING—**Terrycloth ripped, seams torn, zippers won't work.**

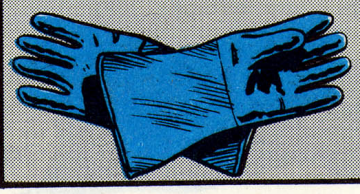


HOOD—**Seams cracked, uncoated, peeled, visor cracked, broken, coating ripped, badly worn, fabric shows;** snap fasteners won't work right, missing; suspension loop loose.

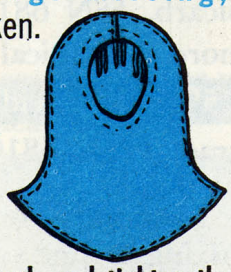




GLOVES—**ripped, badly worn, fabric shows.** Look real close, especially around the fingers.



HOOD, COOLING—**Ripped, torn seams, plastic tie-down strings missing,** broken.



Check and tighten the small nut inside the liner. This secures the loop.

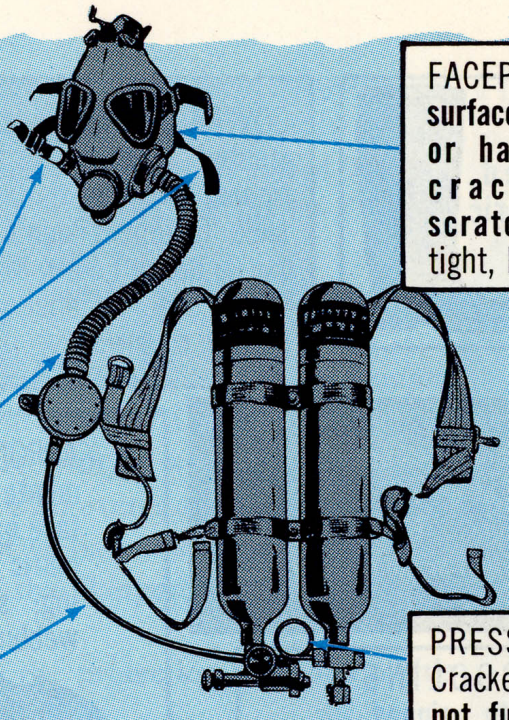
PS MORE

When you check out your M21 or M13 or M15A1 breathing apparatus, first go over the entire item for loose or missing parts. Then check out these individual parts:

HEAD STRAPS—Badly worn, deteriorated.

BREATHING TUBE—**Torn, cracked around folds,** holes.

CONNECTIONS (Back pack assembly, low pressure hose assembly and demand regulator)—Not tight.



FACEPIECE—**Rubber surface cracked, torn or hardened; lens cracked, badly scratched;** fits too tight, **leaks.**

PRESSURE GAGE—Cracked, clouded; **unit not full; wrong pressure** (below 2050 PSI).

DECONTAMINATING AND CLEANING

However, it's not enough just to make sure your protective equipment's in shape before you use it. You have to be mighty sure you get the poisonous stuff off afterwards. Here's a list of the kinds of decontaminant that go with the different types of fuel or oxidizer:

RFNA.....5% sodium bicarbonate solution.
M3.....5% acetic acid solution.
UDMH.....5% acetic acid solution.
ETHYLENE OXIDE.....water (and plenty of it!)

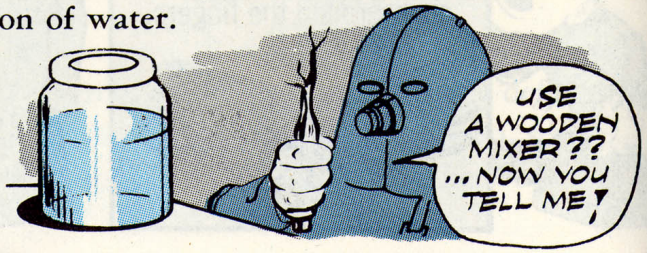
Before you go any further, though, mix up the solutions the decontaminating bit calls for. Like so:

5% sodium bicarbonate solution—Add half a pound of sodium bicarbonate USP (FSN 8950-292-9611 . . . 1 lb . . . QM) to a gallon of warm water.

When making small quantities, use that or get 1 lb. USP from the Medics under FSN 6505-141-5000, but if you need larger quantities, use technical bicarb, FSN 6810-290-5574 (Chem) for 100 pounds. The technical bicarb is more economical to use and will make a more satisfactory solution.

5% acetic acid solution—Add half a pound of glacial acetic acid, technical grade (FSN 6810-275-1215) to a gallon of water.

There are a couple little tricks to this mixing business. For instance, always use clean glass containers and a wooden mixer. And always put the water in



first, then the acetic acid or sodium bicarbonate.

Once the stuff's been mixed, it'll retain its effectiveness for six months or more. If you store it, though, be sure it's not exposed to freezing.

Of course, if your outfit's got one of those M268 propellant servicing trucks, you've got it made in the shade. TM 9-5056-12 (Sep 59) gives a complete rundown on mixing bicarbonate of soda solution in para 23c and preparation of acetic solution in para 32c. Pay special attention to the TM's instructions on handling and care of the truck's mixing equipment.

For a rundown on how to go about decontaminating your protective gear, lend an eyeball to Table IV in TM 9-1970-2 (Feb 58) w/changes, or para 23 in TM 9-5056-12.

What solutions you'll use depends on what chemical you're trying to get off a particular piece of equipment.

For example, on **Boots, Cooling Suits, and Gloves,** if they have M3 or UDMH on 'em, soak the items in 5% acetic acid solution or undiluted vinegar. Then rinse with water. Next scrub with soap and water. Then rinse again and air dry. (Don't let the water go inside of your boots.)

But if you got RFNA on 'em, soak them with soap and water, rinse again and air dry.

Coveralls and Hoods—You decontaminate them both just like you treated boots, gloves and liners when they're messed up with M3 UDMH and RFNA. But, in addition to these treatments, you also launder the coveralls and hoods in equipment designed for just this purpose.

Mask—If it's got RFNA on it, dunk it in water first and wipe the decontaminant off with a rag. Then sponge it off good with 5% solution of sodium bicarbonate. Next sponge it with clear water and let it air dry.

But, if the mask has fuel on it, dunk it in water, then sponge it real good. Then let it air dry.

You want to be real careful how you dispose of cleaning rags. Follow your local SOP on burning or laundering 'em and be mighty sure to decontaminate everything that comes into contact with M3 fuel—including your hands.

Of course, if you're decontaminating equipment on the M268 truck, you'll follow the dope in TM 9-5056-12, especially para 23. You want to be sure to spray the transfer hose with the decontaminating spray gun after you're through.

FIRST-AID TREATMENT

And while you're taking care of your equipment, don't forget about PM for yourself and your buddies.

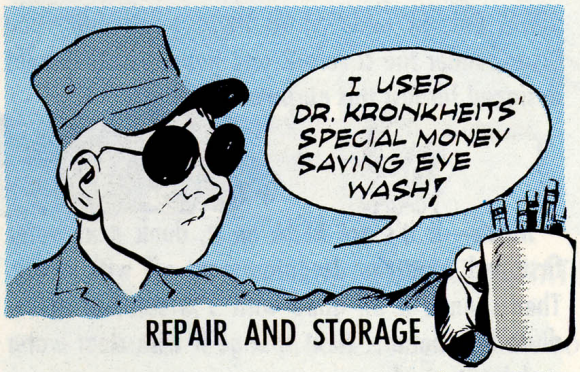
Keep plenty of the first-aid solutions on hand—some to go with every type of hazard like it says in para 83 of TM 9-1970-2. Here's a list of the stuff you should use for treatment after you get one of the chemicals on you:

RFNA	5% sodium bicarbonate solution
M3	magnesium sulphate solution
UDMH	magnesium sulphate solution
ETHYLENE OXIDE	magnesium sulphate solution

PS MORE

Remember, though, that first-aid treatment for all these types of chemicals begins with immediate flushing of the skin with plenty of clear water till the specific agent can be applied. Don't ever use anything but clear water for bathing the eyes. Flush 'em good for 10 or 15 minutes.

Be mighty sure to read and heed the warning notices and safety measures for handling oxidizer and fuel on the first pages of TM 9-5056-12.

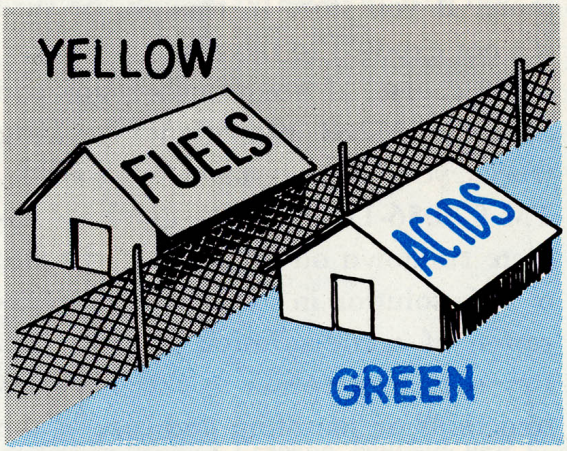


REPAIR AND STORAGE

Local SOP and TB QM 97 (4 Sep 59) spell out pretty much what you can do about repairing damaged items. Normally, you'll be limited to minor repairs like replacing missing, broken or worn out hardware and darning small holes. Or maybe restitching loose or deteriorated threads on the water evaporation hood and coveralls.

There's one real important rule in using protective equipment: Never—**absolutely never**—use the same clothing and equipment for handling both fuels and acids. And make sure they're stored separately.

To help keep you from mixing them up, all missile fuel-handling equipment must be color-coded to show whether it's to be used for fuels or acids.



And never the twain shall meet!

Table IV in TM 9-1970-2 has a whole column on correct marking of the various items.

This same table also spells out the right ways for storing. The big thing to remember here is that the items must be cleaned and dried thoroughly before being stored . . . and that those marked yellow must always be kept separate from those marked green.

Para 24 of TM 9-5056-12 gives a complete rundown on the use, method of putting on the equipment and on its care and preservation.

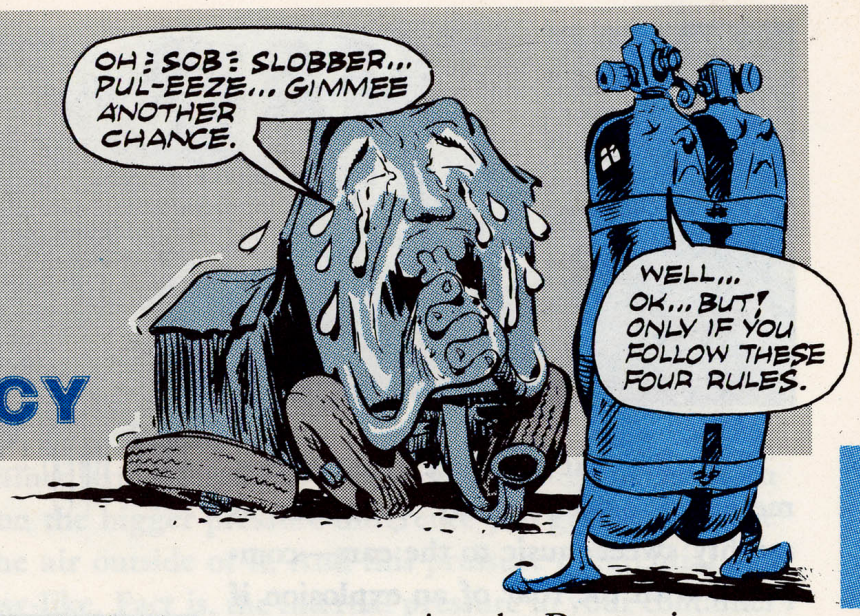
Protective clothing used with the M268 truck can be stored in the lockers at rear of the vehicle, while the protective masks can be kept in a special watertight box beneath the left rear end of the truck body.

PLAY IT SAFE

In short, protect your equipment when you're not using it and it'll do the same for you when you are using it.

The more you know, the safer you'll be—so know and use the tips in paras 82 and 93 of TM 9-1970-2.

THE DAVEY'S OK – IN AN EMERGENCY

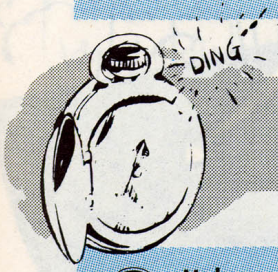


Hey you Missilemen—here's the latest scoop on using the Davey air compressor for refilling your M15 breathing apparatus.

Yup . . . that's the word.

Now, the Davey PRC-15 can be used to recharge the M15 BA cylinders—but only in an emergency—and only when you follow four "rules".

1 The Davey's mechanical filter element (FSN 4310-861-6771) **must be one that has never been cleaned with any type of cleaning solvent.**



2 That mechanical filter **must not** be used more than 50 hours—then, replace it with a new one—don't clean it—replace it!

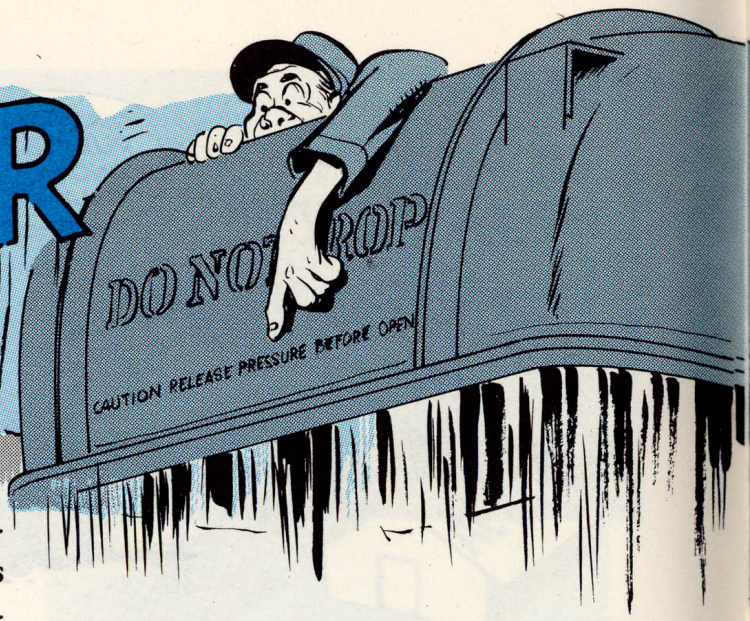
3 Make sure the Davey is used in an area as free from contaminated air as possible.

4 Air being used for breathing apparatus **must** be tested like it's spelled out in TB CML 93, dated 1 June 1962.

Natch . . . this new switch changes the poop you read on page 47 of PS 104—as far as the Davey goes.

But, you can still do the refilling job by using the Rix compressor (Model XM 366) or Joy compressors (Models 15H1 or HGP5-MS-1). If you don't have any of these at your site—ship the cylinders to your support or get them refilled by a local purchase of compressed air.

THAR



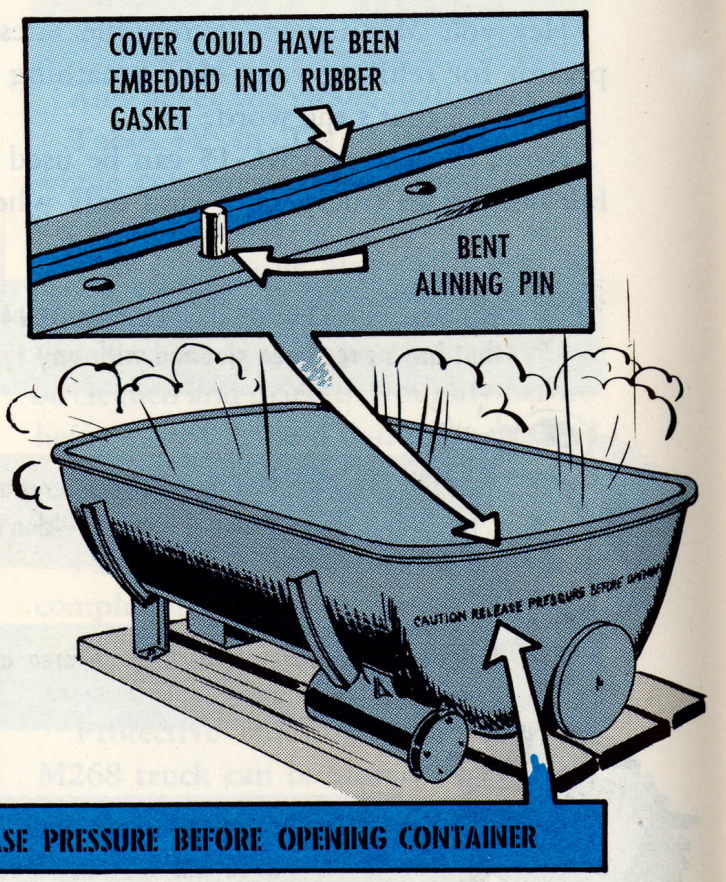
Releasing air pressure from a hermetically sealed metal container is mighty sweet music to the ears—compared with the roar of an explosion if you don't let the air out!

CHECK STENCILING

Take the case of one air type, removing a T-53 gas turbine engine from its metal shipping container, for a quick engine change in his Iroquois (UH-1).

In the hustle and bustle of the switch these words of wisdom, stenciled right on the container, were overlooked—CAUTION: RELEASE PRESSURE BEFORE OPENING CONTAINER.

So, according to one teller of hair-raising tales, here is what happened. After the last container nut and bolt were taken off, the internal pressure suddenly blew the cover sky high, missing a mech by only a few inches . . . could've been a mite more unfortunate!



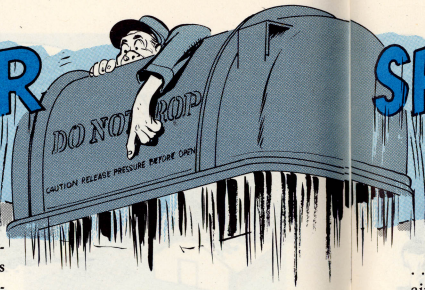
So what can hold the cover on a container even after the last bolt comes out? Well, it might be a bent aligning pin, or maybe a container lays in storage a long time and the metal cover gets embedded right into the rubber gasket . . . you'd never be able to see such a defect with the cover on.

But 'tis easy to see the "why" of this pressure problem.

Say, for example, your base elevation is about sea level and you pressurize an aircraft engine container at 6 PSI, like it says in TM 55-1520-208-20 (Sept 1962), Chapter 4, page 2-8, paragraph 2-28w.

AIR MOBILITY

THAR SHE BLOWS



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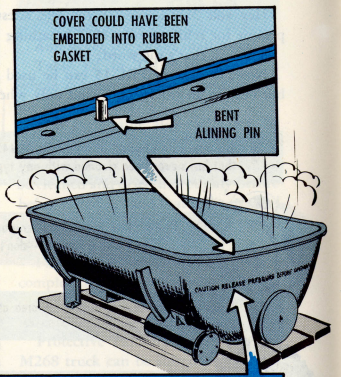

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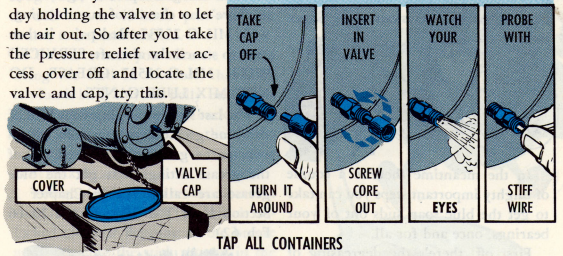
Then suppose the container got shipped to a base with a higher elevation . . . the higher the elevation the bigger pressure difference you get between the air in the container and the air outside of it. And this pressure differential can blow a container cover, easy-like. Fact is, the internal pressure in your container is a safety hazard if it's opened at **4000 feet, or more,** above sea level.

That's why, in addition to reading the stenciling on the container, the **first** step in opening 'er up is to let the air out through the pressure relief valve.

These big babies hold a lot of air and you could be all day holding the valve in to let the air out. So after you take the pressure relief valve access cover off and locate the valve and cap, try this.

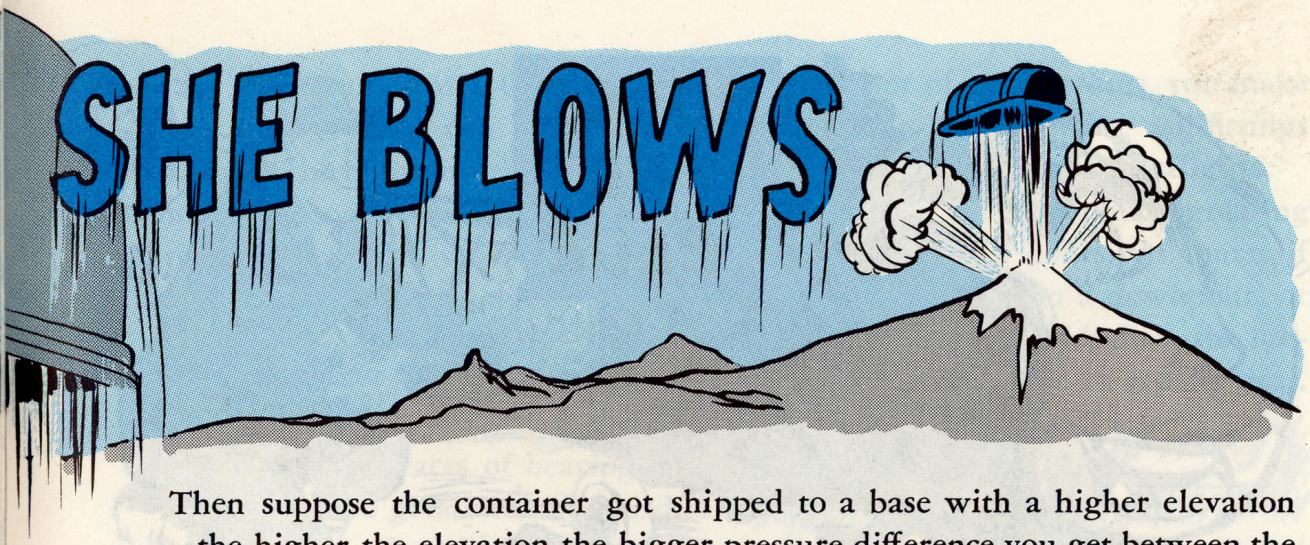
Turn the valve cap around, insert it into the valve and screw the valve core right out of there. Just one point, though—don't crowd the escape valve. You could end up with a mighty irritatin' eyeful of metal or dust particles from the air blast! And to make sure all the air is out, you might even use a piece of stiff wire to probe the valve hole to be sure nothing's blocking release of the air pressure.



TAP ALL CONTAINERS

The same idea goes for unpacking any other pressurized hermetically sealed metal containers used to ship any piece of Army equipment . . . the air pressure has to be released, **first-off.**

And you want to follow all the instructions printed right on a container and check the pubs for more unpacking dope on your equipment before you lift any cover . . . no sense askin' for the big BOOM!



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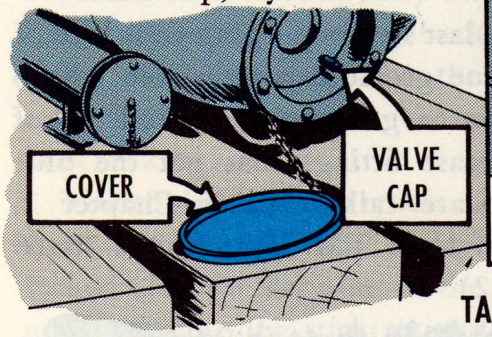

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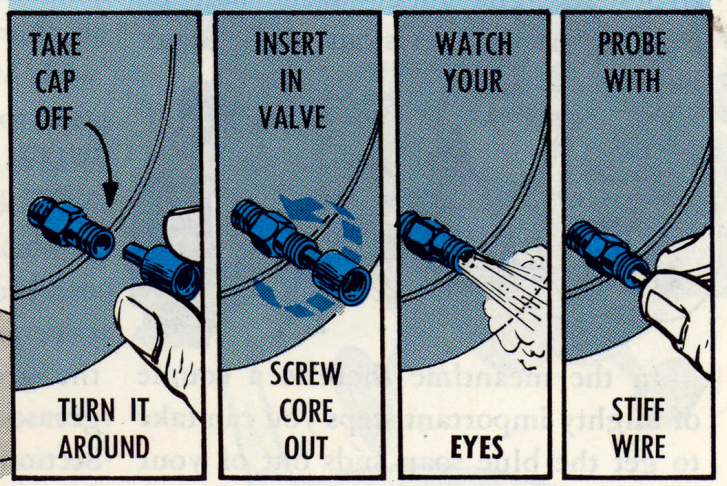

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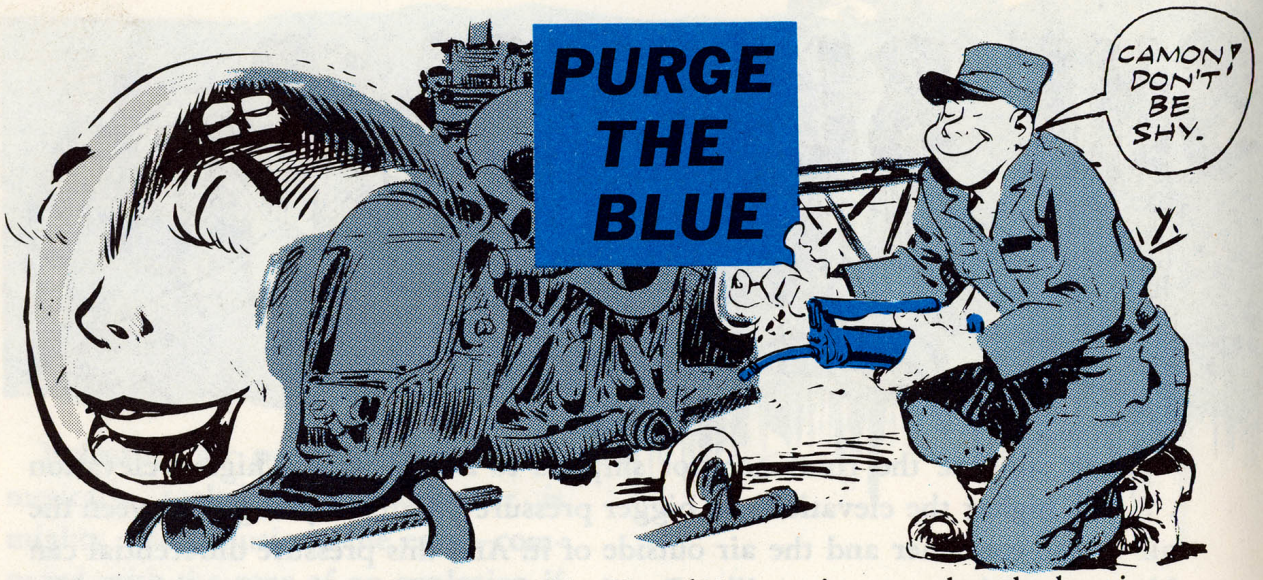
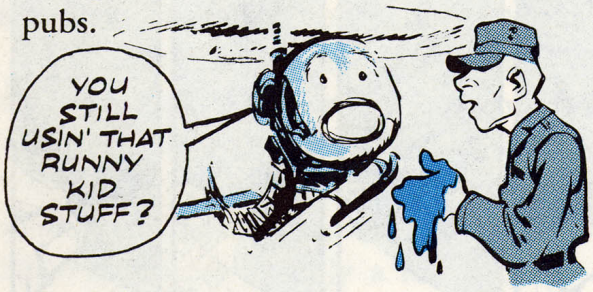
PURGE THE BLUE



If lubin' your Sioux (OH-13) with MIL-G-25760, grease, FSN 9150-656-1501, (either blue or brown in color) has you blue in the face trying to make it stick—your troubles are over.

The word in TWX SMOSM-EH-13-10-02361 (22 Oct 62) is to quit using this runny grease and go back to using old reliable MIL-G-25537, FSN 9150-616-9020. The lube charts will be changed back in revisions to the Sioux pubs.



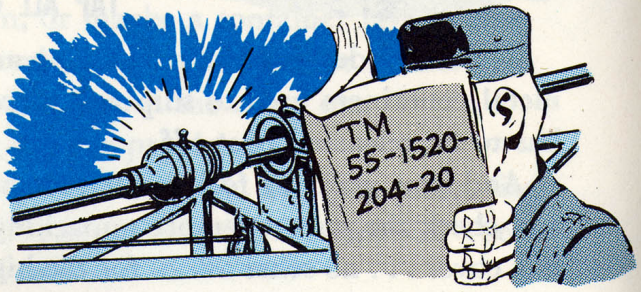
In the meantime there're a couple of mighty important steps you can take to get the blue soap suds out of your bearings, once and for all.

First off, there's the degreasing of the main rotor head bearings. Your support does this 'cause they have the main rotor inspection kit, P/N 47-1510-1, FSN 1560-545-7086, needed during disassembly and assembly.

TWX SMOSM-EH-13-09-00038 (9 Sep 62) says, in part, that the bearings are washed two times in dry cleaning solvent, P-S-661, FSN 6850-264-9039. They're washed two more times in Isopropyl (alcohol), 91-99 per cent, FSN 6810-227-0410, and allowed to dry. No air compressors, please! TM 55-405-3 (10 May 62), Chapter I has the info on drying bearings.

The bearings are packed right away, so there's no chance of rust forming, with MIL-G-25537. Red paint is then used to stencil the aircraft, SERVICED WITH MIL-G-25537 GREASE, DO NOT MIX LUBRICANTS.

The last step in purging your bird of the blue grease can be a solo act on your part—grease gun in hand. All of the grease fittings that got the blue grease are called out in Chapter 2, Section II of TM 55-1520-204-20 (6 Feb 62).



So you pump MIL-G-25537 into those fittings until you see the color change, which means the old grease should be gone. Don't spare the new grease, either. You want to get rid of any harmful film that might be stuck

on the balls and races of bearings.

When all the grease in your bird is changed over, the old MIL-G-25760 stencil gets taken off and MIL-G-25537 is added . . . and that's not all!

To be sure all the blue grease is worked out of the bearings, you make with the grease gun on all fittings after each of the **next four flights.**

From then on the regular greasing set up is every 10 hours. Of course if your bird has been in a downpour, or she's all choked up with dust, the lubings can be moved up to a daily deal.

Yessir, that blue grease never did pan out. Field experience and tests showed it just didn't have what it takes to keep a bird healthy.

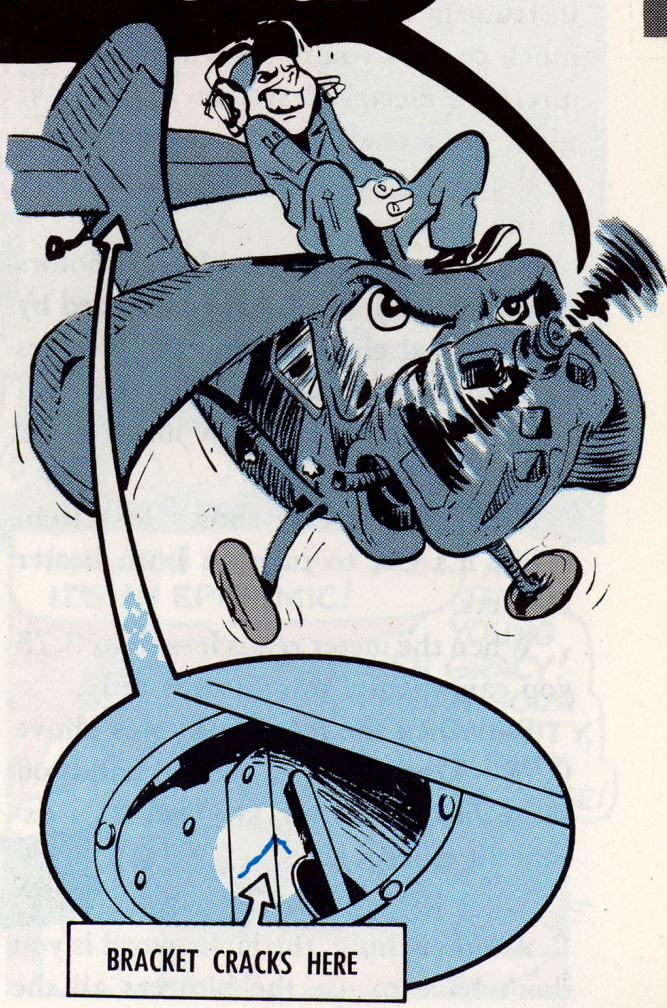
EASY ON THE STICK

Handling the control stick in a Bird Dog (0-1) is somewhat like handling a doll on a 48-hour pass—neither wants to be manhandled.

'Course when you throttle jockeys bring the bird in to roost, that stick is plumb back to your belly button, as it should be. But hauling back on 'er with brute strength, like there's no tomorrow, could crack the elevator bellcrank bracket.

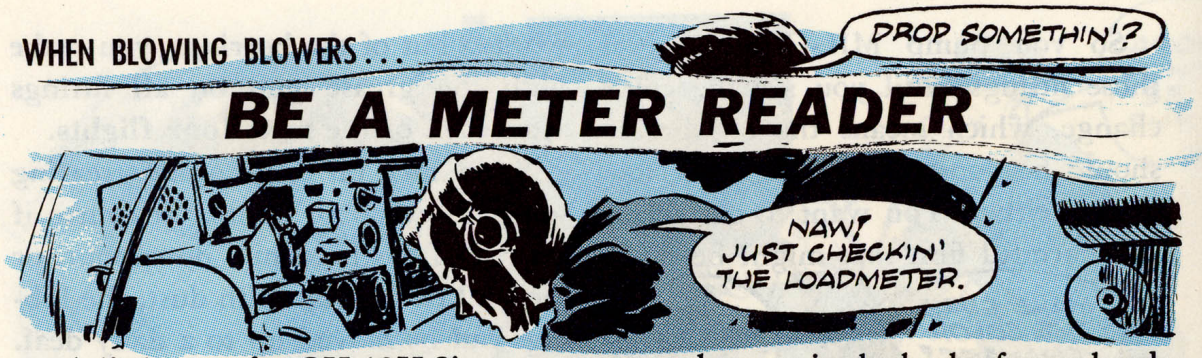
You could also get a cracked bracket (and a grounded bird) from an unlocked elevator flapping in the breeze and whipping the stick around in the cockpit . . . which is the reason for the control lock bar, of course.

There's no doubt 'bout it. Going easy on the muscle power and locking the stick can save your bird from taking a real beating.



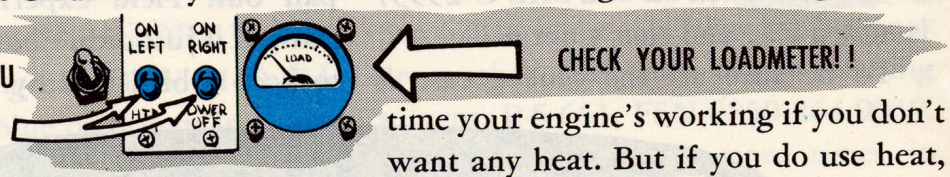
WHEN BLOWING BLOWERS . . .

BE A METER READER



A little note for OH-13H Sioux crews to tuck away in the back of your heads: WATCH THE METER BEFORE YOU OPERATE THE HEATER.

Undoubtedly, everybody concerned has noticed that your H-series Sioux choppers come complete with a loadmeter. Now the ammeter you're used to on your E- and G-series Sioux tells you the **rate** at which the generator charges your battery.



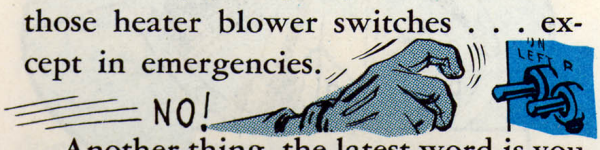
But this loadmeter now—this here instrument is different. It tells you how much current you're drawing from the aircraft's electrical system . . . and it gives you a reading that's a **percentage** of the total electrical energy (current) in the system.

Since the two heater blower motors in your H-series Sioux are energized by an electrical circuit, using the blowers puts an added **load** on your electrical system. Your clue on how much is the loadmeter reading.

So if your meter shows **less than 0.55,** it's OK to turn on **both** heater blowers.

When the meter reads **less than 0.75** you can operate **one** blower **only.**

But when the meter indicates **above 0.75**—keep your pea-pickin' hands off those heater blower switches . . . except in emergencies.

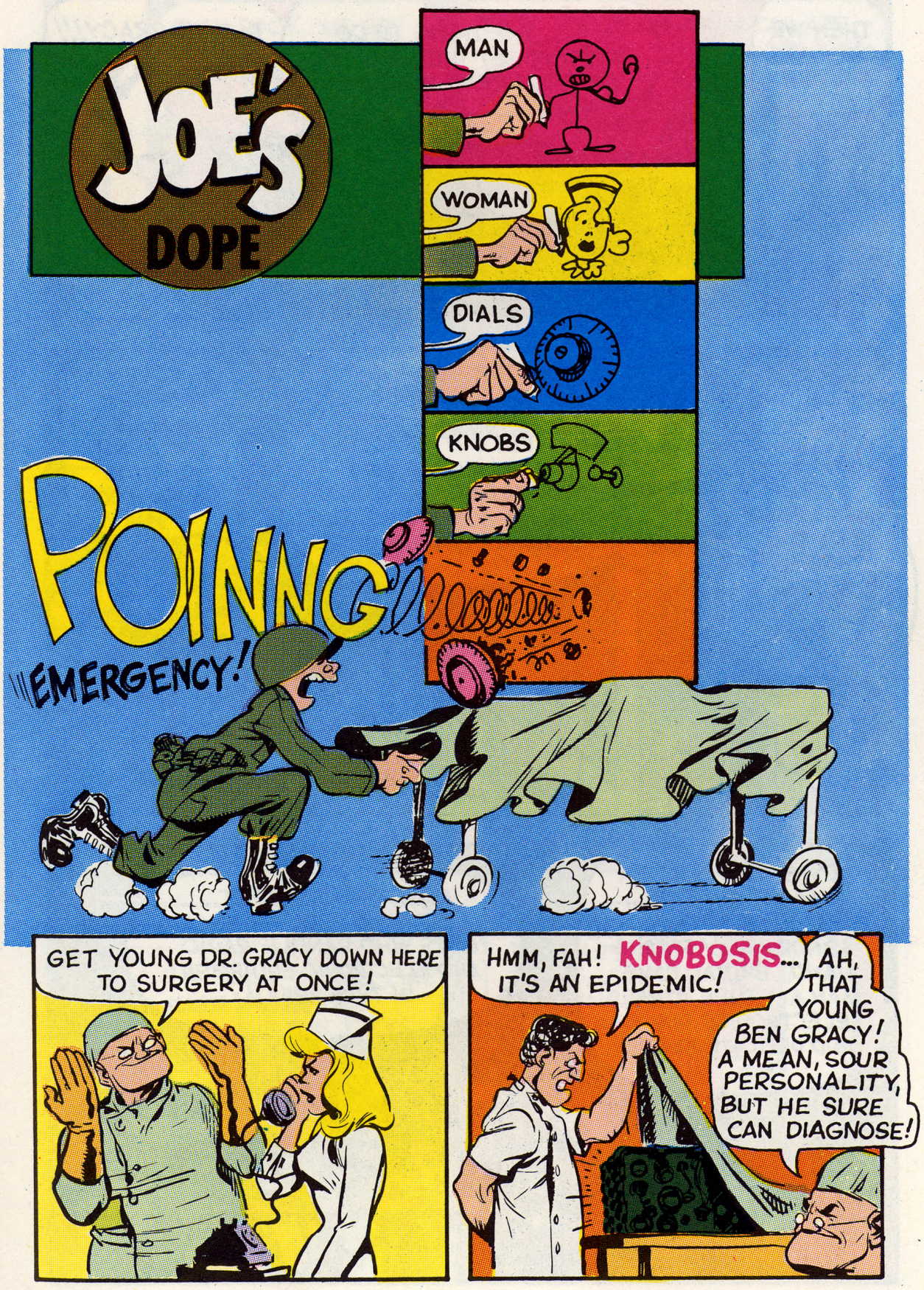


Another thing, the latest word is you don't have to use the blowers all the time your engine's working if you don't want any heat. But if you do use heat, remember that you're required to bypass all heated air overboard under 10 knots IAS. That means the HEAT OVERBOARD lever stays pushed in (down) until you pick up enough air speed.

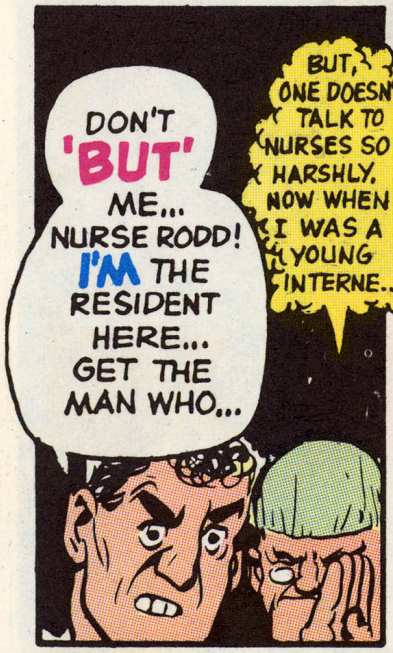
Of course this info doesn't apply to the E- and G-series Sioux, which don't have the new cabin heating and defrosting system installed. It's just a helpful hint to H-series Sioux operators to ease the load on your electrical system.

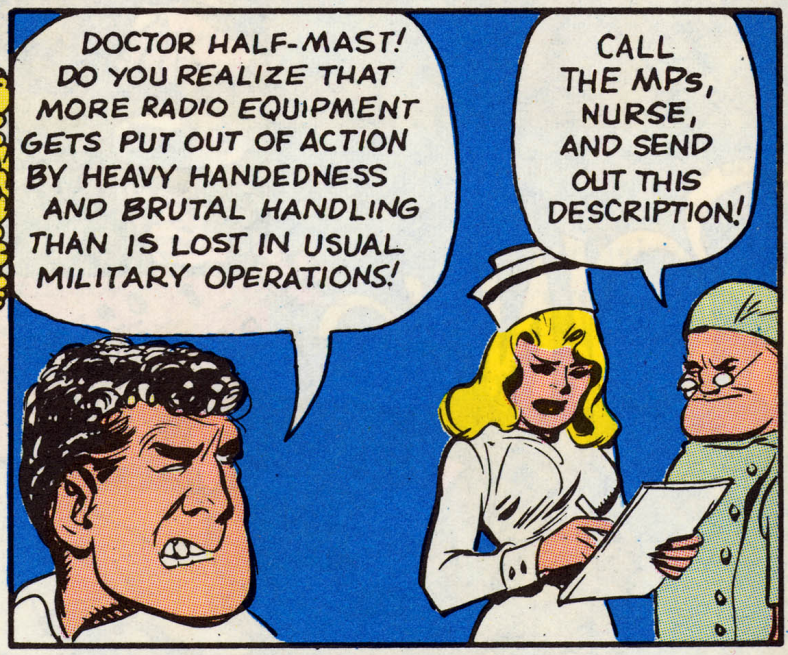
By the way, that meter will read high right after you crank up, since some of the available juice will be used to recharge the battery. After battery recharge, the meter will drop off, and you can then turn on the heaters—if you need 'em.

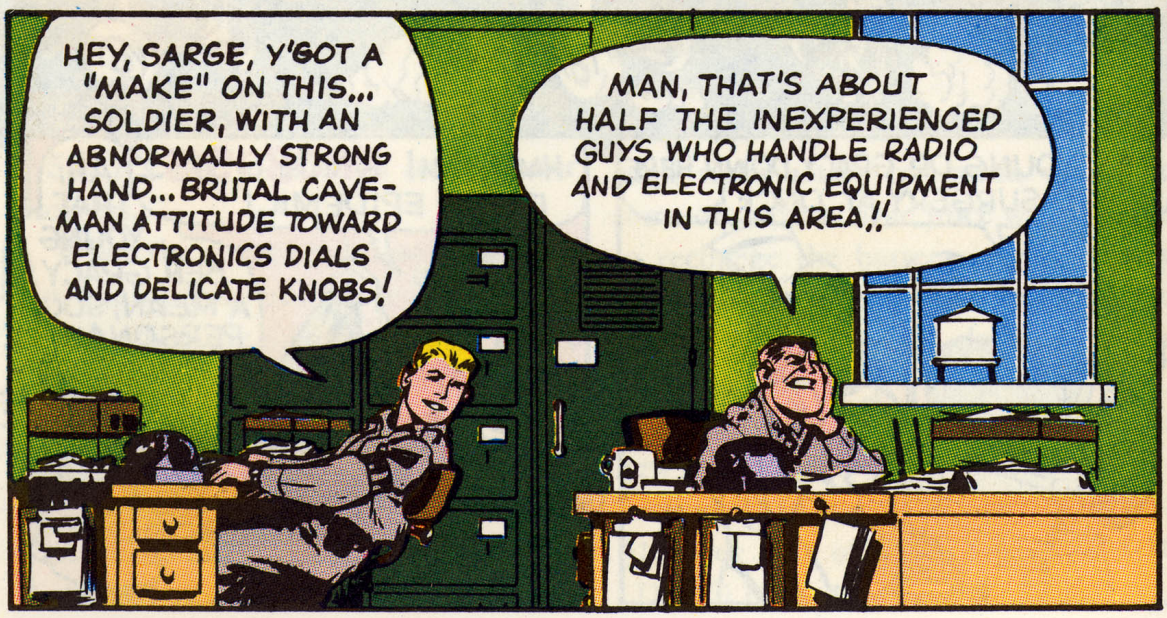
If you want an authority for this new info, check out paragraph 2-11, Section II, Chapter 6, in Change 1 (11 Dec 62) of TM 55-1520-204-10 (Dec 61).


JOE'S DOPE
MAN
WOMAN
DIALS
KNOBS
POINNG!!
EMERGENCY!
GET YOUNG DR. GRACY DOWN HERE TO SURGERY AT ONCE!
HMM, FAH! KNOBOSIS... IT'S AN EPIDEMIC!
AH, THAT YOUNG BEN GRACY! A MEAN, SOUR PERSONALITY, BUT HE SURE CAN DIAGNOSE!

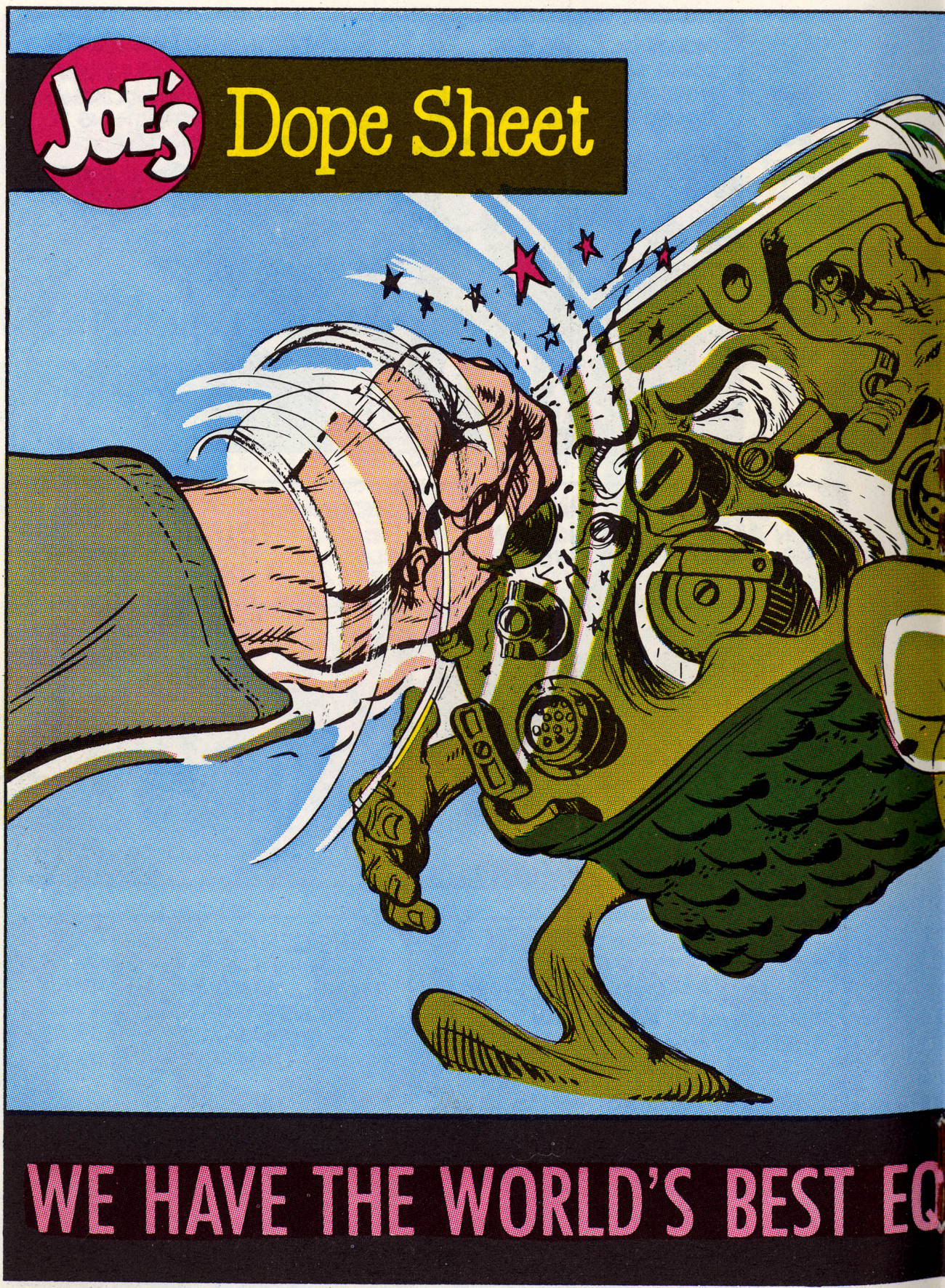
THEN WE OPERATE AT ONCE.
NO!...THE THING TO DO FIRST IS GET THE CARRIER OF THIS DREAD DISEASE!
BUT, DR. GRACY!!!


DON'T 'BUT' ME... NURSE RODD! I'M THE RESIDENT HERE... GET THE MAN WHO...
BUT, ONE DOESN'T TALK TO NURSES SO HARSHLY. NOW WHEN I WAS A YOUNG INTERNE...

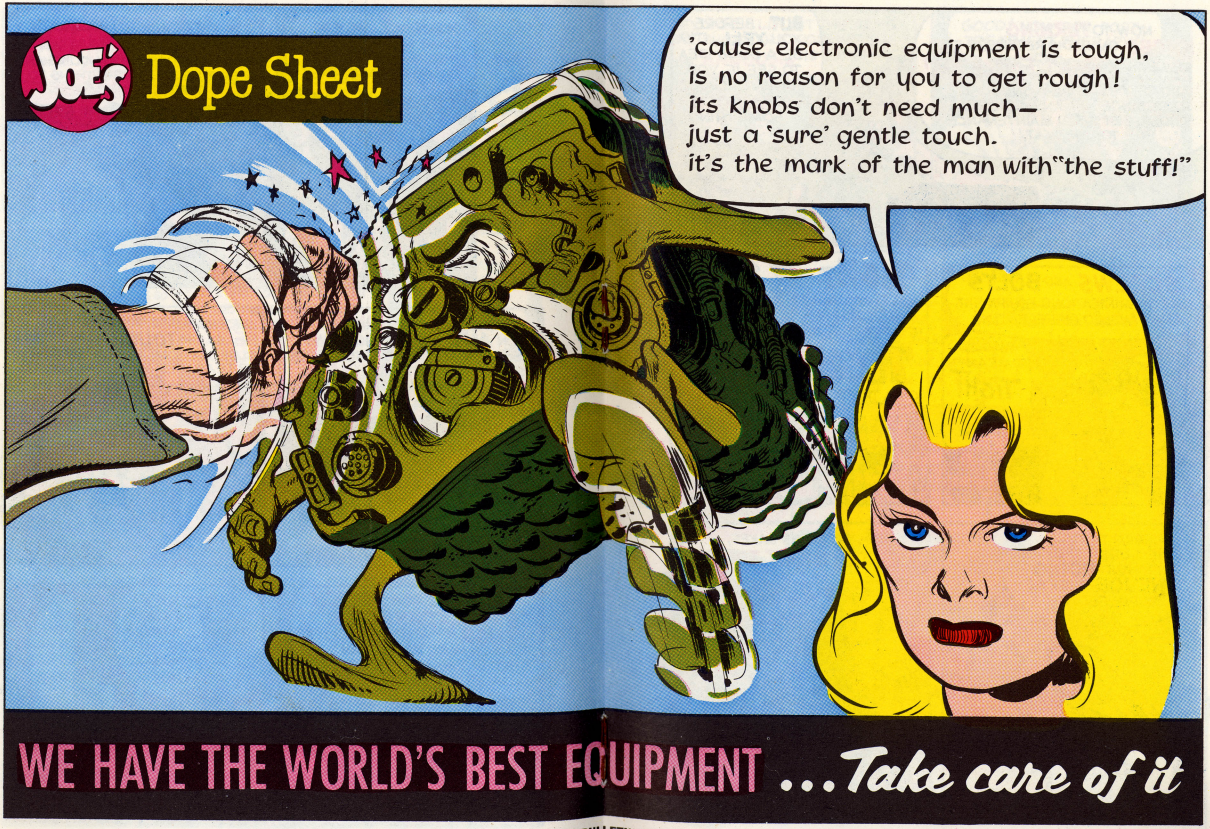

DOCTOR HALF-MAST! DO YOU REALIZE THAT MORE RADIO EQUIPMENT GETS PUT OUT OF ACTION BY HEAVY HANDEDNESS AND BRUTAL HANDLING THAN IS LOST IN USUAL MILITARY OPERATIONS!
CALL THE MPs, NURSE, AND SEND OUT THIS DESCRIPTION!


HEY, SARGE, Y'GOT A "MAKE" ON THIS... SOLDIER, WITH AN ABNORMALLY STRONG HAND...BRUTAL CAVE-MAN ATTITUDE TOWARD ELECTRONICS DIALS AND DELICATE KNOBS!
MAN, THAT'S ABOUT HALF THE INEXPERIENCED GUYS WHO HANDLE RADIO AND ELECTRONIC EQUIPMENT IN THIS AREA!!

AND SO, BACK AT THE SHOP several hours later
OKAY, DOC!!... WE GOT SOME SUSPECTS!!! YOU GONNA INOCULATE THEM OR SOMETHING?
YES, I'M GOING TO INOCULATE THEM WITH INFORMATION! A GOOD SHOT OF PM HANDLING AND OPERATING TIPS IS THE THING TO CURE KNOBOSIS.
MP
LET'S START WITH CONNECTORS (ON ANY COMMUNICATION EQUIPMENT). THEY SHOULD BE SCREWED TOGETHER FINGER TIGHT -- WITHOUT FORCING.
...REMEMBER, A SENSE OF FEEL OR TOUCH IS NEEDED, ELSE YOU CAN BREAK 'EM OFF OR TEAR UP THE RECEPTACLES
SAME GOES FOR SWITCH CORDS... CONNECTOR PLUGS -- AND THINGS LIKE THAT... A HARD YANK CAN MURDER 'EM -- AND THE JACKS OR RECEPTACLES THEY GO IN.
...THE GENTLE TOUCH IS THE THING... WHICH REMINDS ME, HERE'S A PIN-UP...



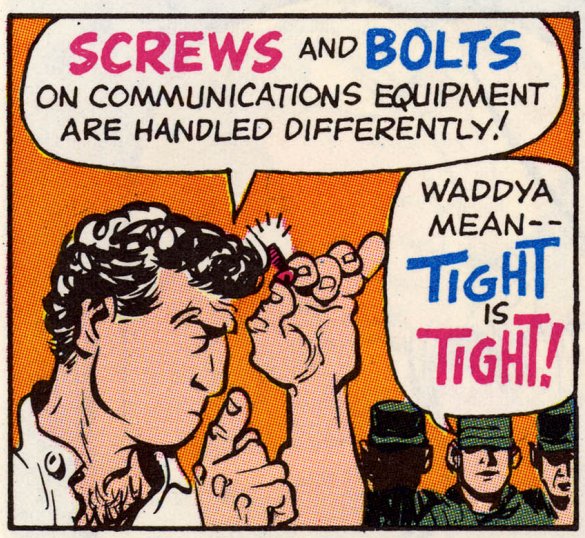
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULL

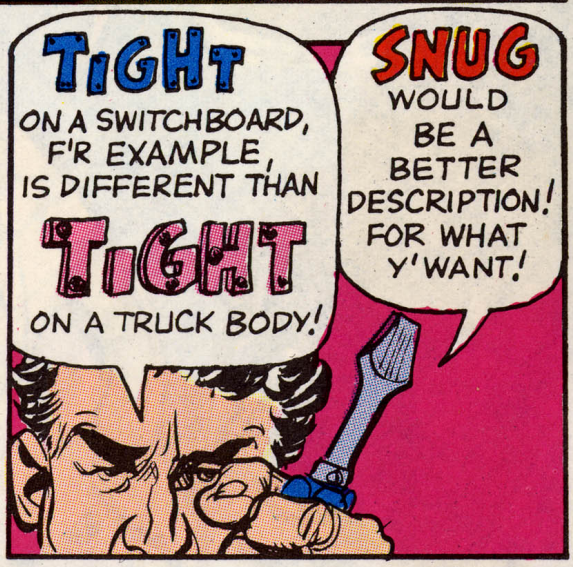


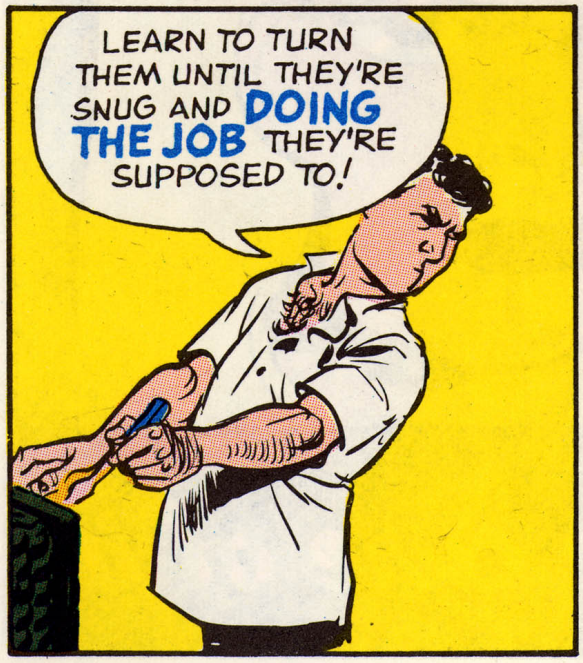
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

LETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

NOW TO TURNING KNOBS ON RADIO RECEIVERS, ETC. REMEMBER DON'T FORCE 'EM! AND, IF Y'FEEL ANY UNUSUAL RESISTANCE ON ANY CONTROL KNOB... GET FIELD MAINTENANCE TO CHECK IT!
BUT... BEFORE YOU YELL, IT'D BE A GOOD IDEA TO SEE IF YOU HAVEN'T FORGOT TO UNLOCK SOMETHIN'!


SCREWS AND BOLTS ON COMMUNICATIONS EQUIPMENT ARE HANDLED DIFFERENTLY!
WADDYA MEAN-- TIGHT IS TIGHT!


TIGHT ON A SWITCHBOARD, F'R EXAMPLE, IS DIFFERENT THAN TIGHT ON A TRUCK BODY!
SNUG WOULD BE A BETTER DESCRIPTION! FOR WHAT Y'WANT!


LEARN TO TURN THEM UNTIL THEY'RE SNUG AND DOING THE JOB THEY'RE SUPPOSED TO!

AND F'HEAVENS SAKES, USE THE RIGHT TOOL!

HERE'RE A FEW TIPS

R-392/URR

Rx for megacycles and kilocycles control knobs and dial lock. Don't turn KC knobs without releasing dial lock. If you turn it when locked you strip the KC control.

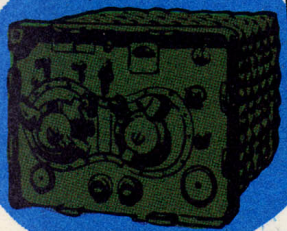
Ben Gracy MD.

R/110

Rx for detent screws in dial drive assembly and tuning knobs. Don't force detent screws or you'll break the detent springs. Don't force the tuning knobs. That too will break the detent springs. Don't spin the tuning knob or any other knob.

Ben Gracy MD.

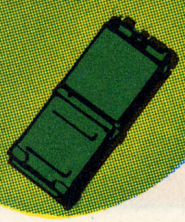
RT-66-68



Rx for R.F. position check. When checking R.F. position easy does it with the trans ant. coupling screw when peaking. Just a slight twist gives it enough to peak the set.

Ben Gracy MD.

AN/RRC-8, 9, 10



Rx for tuning knob. Don't turn tuning knob before releasing dial lock... Otherwise, you will strip the gears of the frequency adjustment mechanism.

Ben Gracy MD.

AN/GRC-9
AN/VRC-34
AN/GRC-87
RADIO SETS

℞ for frequency and tuning controls. When locking the freq. and tuning controls, hold the knobs gently while snapping the lock... in order to keep from pulling the control off frequency. Same goes for tuning control.
Ben Gracy MD.

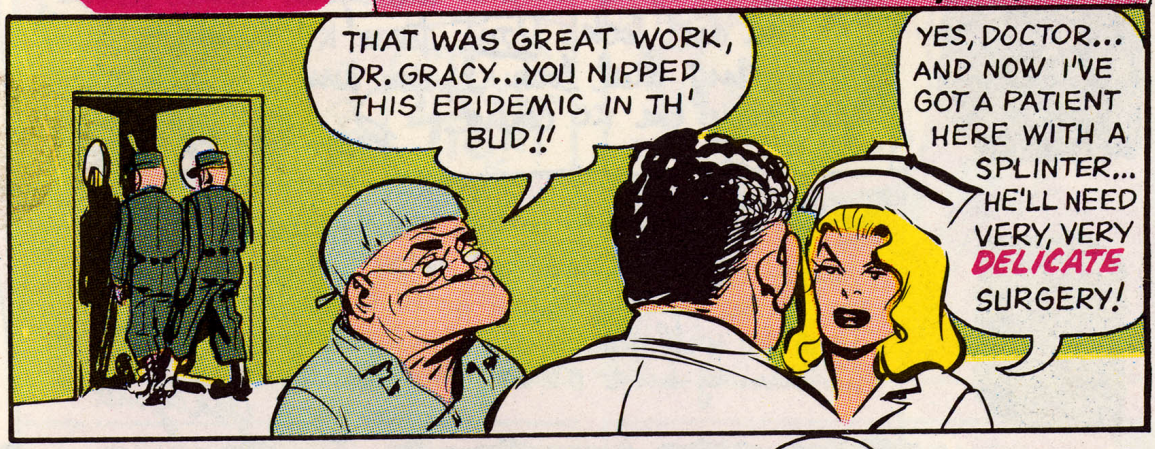
IM-93/UD
RADIACMETER

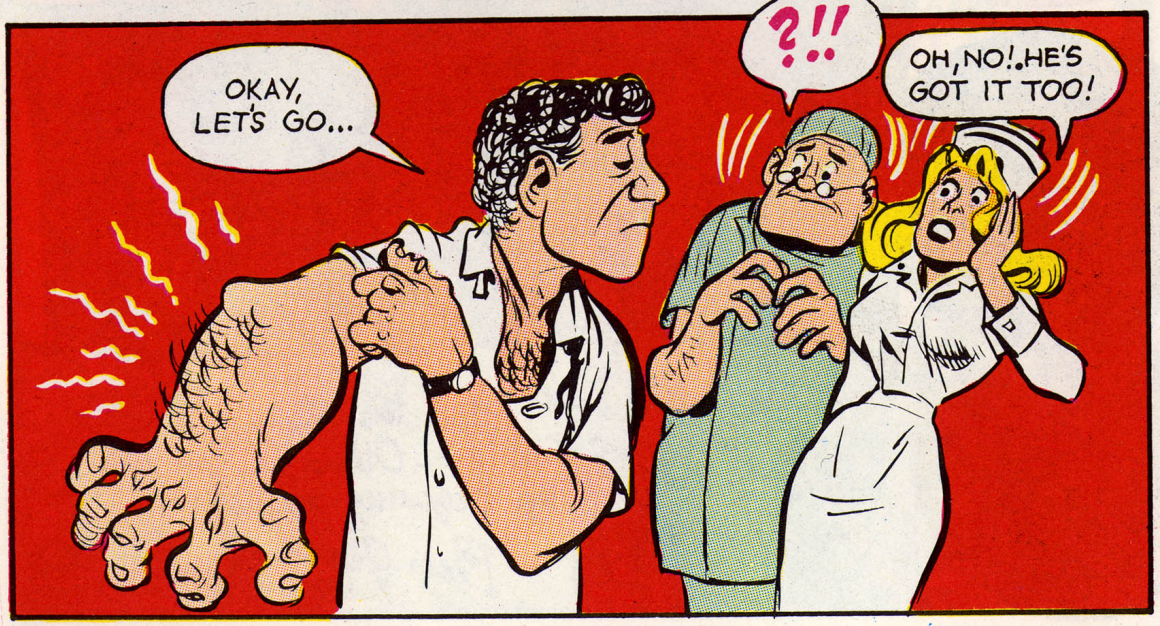
℞ for charging dosimeter. Press down firmly when putting it in it's charger. Hold down until knob on charger is tightened, otherwise, a bad contact will result. Ben Gracy MD.

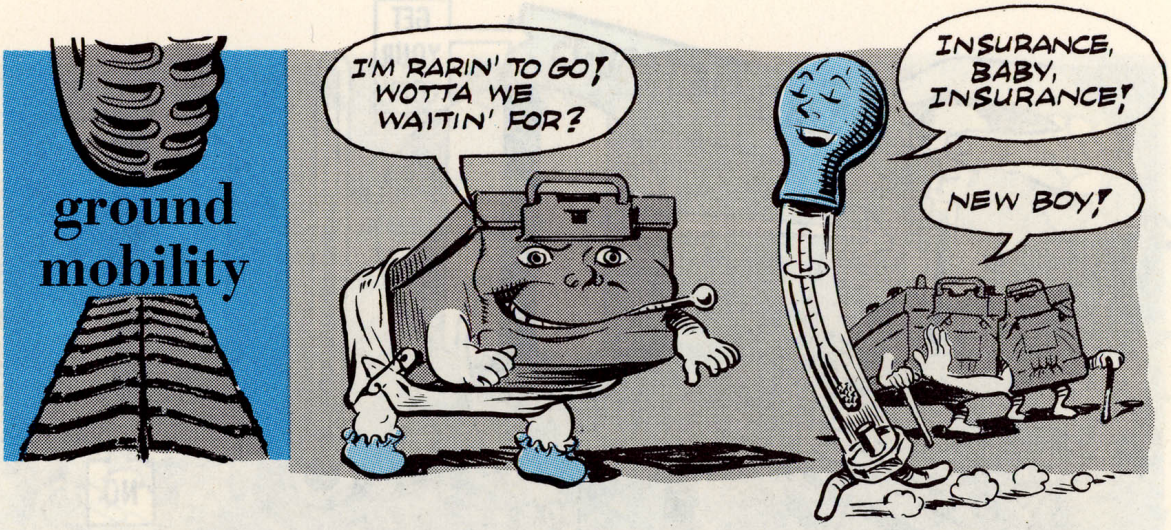
SWITCH BOX SA-142

CHEST SET
GROUP
AN/GSA-6

℞ for quick disconnect receptacle. Don't jam the connector plug into the receptacle... You'll break the side pins and put it out of business.
Ben Gracy MD.



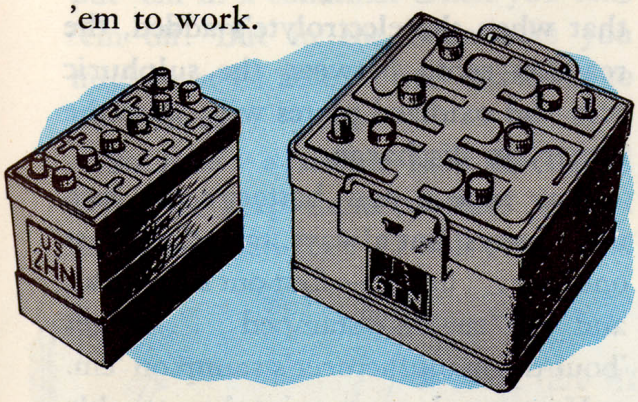




LIFE FOR A NEW BATTERY

No matter the weather . . . be it cold or warm, snowing or raining, it's always nice to find the batteries in your wheeled or tracked vehicle have enough kick to start the engine.

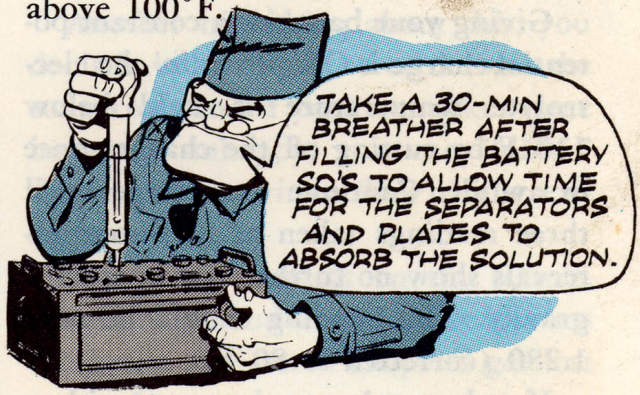
One way to be getting a lot of oomph for a much longer time outta new dry charged 2HN and 6TN batteries is to give 'em a good start before putting 'em to work.



To help give 'em get-up-and-go for the long haul, here's the background on the info in para 45b, TM 9-6140-200-15 (23 Jul 58)—

Remove and destroy the vent plug sealing devices, but leave the plugs alone until ready to fill the battery.

Then fill each cell with electrolyte until the level is approximately ⅜ inch above the separators. If you're in a temperate climate, electrolyte with a specific gravity of 1.280 is the ticket. Keep the temperature of the battery and electrolyte above 60°F, but not above 100°F.

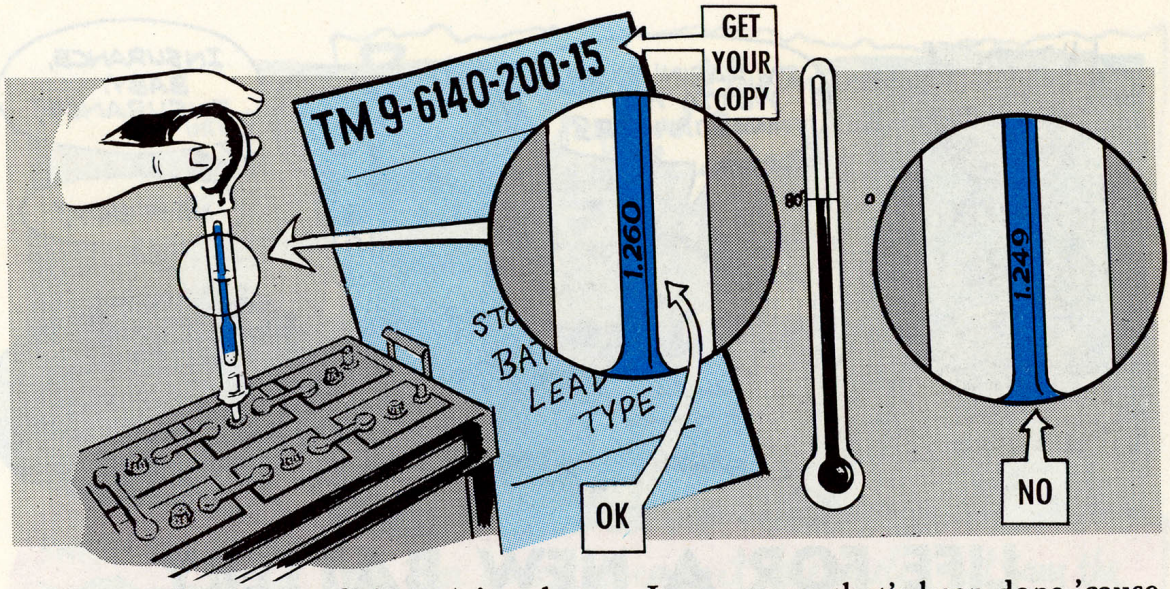


Take a specific gravity reading of each cell (corrected to 80°F), then recheck and refill to ⅜ inch above the separators.

The battery's then ready for use unless one of these conditions shows up:

1. If the specific gravity for any one cell is below 1.250, when readings are taken after waiting for 30 minutes.
2. If the battery won't be used (a good hard run) for at least 12 hours after filling.
3. Or, if the temperature's below 0°F.

PS MORE



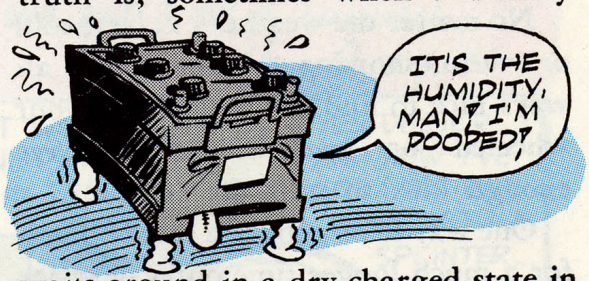
If any of these conditions exist, the battery should get an initial charge (para 46 of the battery TM). Starting its service life without a full charge, it's sure to fail. Using it without a full charge affects its overall performance more'n just sitting around unused.

Giving your batteries a constant potential charge is OK providin' the electrolyte temperature is held below 130°F by cutting off the charger once in awhile. Continue the charge until three readings taken at half-hour intervals show no further rise in specific gravity. This reading should be near 1.280 (corrected to 80°F).

If a battery's put into use with a specific gravity reading below 1.250, you can figure that half of its normal life went down the drain. The shorter life is caused by sulfated plates and/or reverse polarity of one cell or different states of charge between cells. These conditions can contribute to early failure of the regulator relay or put a strain on the generator.

Maybe some of you battery handlers have even been accused of pouring water 'stead of electrolyte into a dry battery . . . Yes?

It may seem that's been done 'cause, truth is, sometimes when a battery



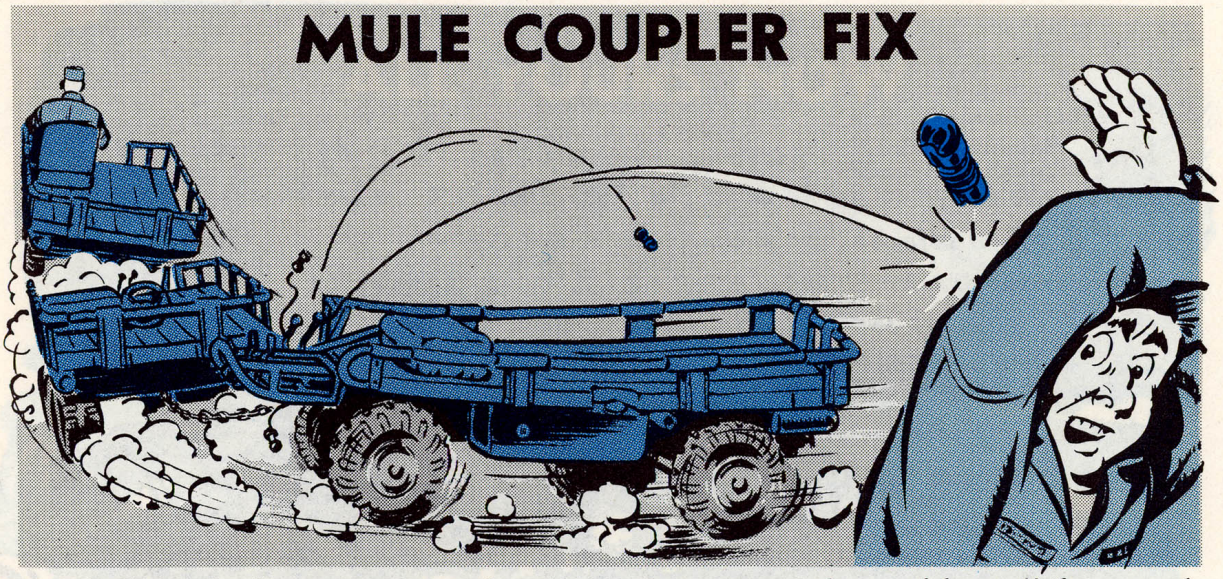
waits around in a dry-charged state in moist air, a chemical reaction takes place. The negative plates'll oxidize so that when the electrolyte's added, the reaction setup between the sulphuric acid and oxidized plates will cause the battery to discharge.

Any time a new battery's put into use, always, but always, take the oldest one first . . . first in—first out sorta deal, and get 'em date-stamped . . . forget 'bout the manufacturer's stamp on 'em.

Have you been running into trouble getting your hands on this popular TM 9-6140-200-15 because the distribution formula doesn't cover your unit? Then use the info in AR 310-2 (1 Apr 59), para 36(2), for your authority to get 'em.

There's a lot of good poop in this TM on the lead-acid type storage battery. Get your copy today.

MULE COUPLER FIX



The quick disconnect couplers on the ½-ton M274 Mules can't get lost if you look after 'em right. They have a way of going AWOL, though, 'specially when the vehicle is being towed.

There's no substitute for taking care of these couplers. They're not common hardware and are hard to get.

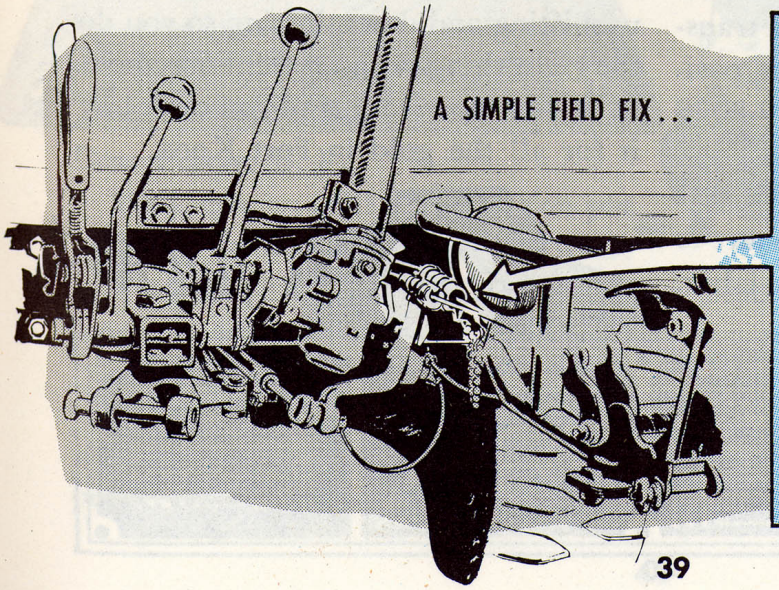
Back in your company area you can put 'em in a container when you take 'em off. But in the boondocks you might not be able to find anything to put 'em in.

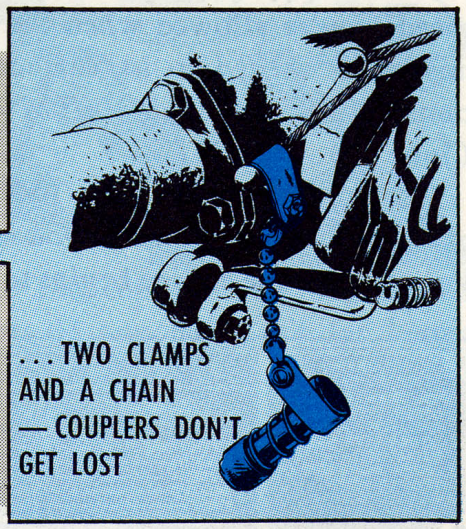
So here's a simple field fix that'll help you keep these couplers present and accounted for . . . link two metal clamps together with a light metal chain or braided steel wire.

You attach one clamp to the coupler and 'tuther to the rear cables. Then, no matter what happens, your couplers don't get lost.

Another nice thing about this, you don't have to drill into or deform the connectors and if your fix makes some inspector unhappy, you can "unfix" the connectors with a flick of a screwdriver.

There are couplers on the starter, clutch, brake and throttle, but it seems the brake and clutch couplers get lost most often.





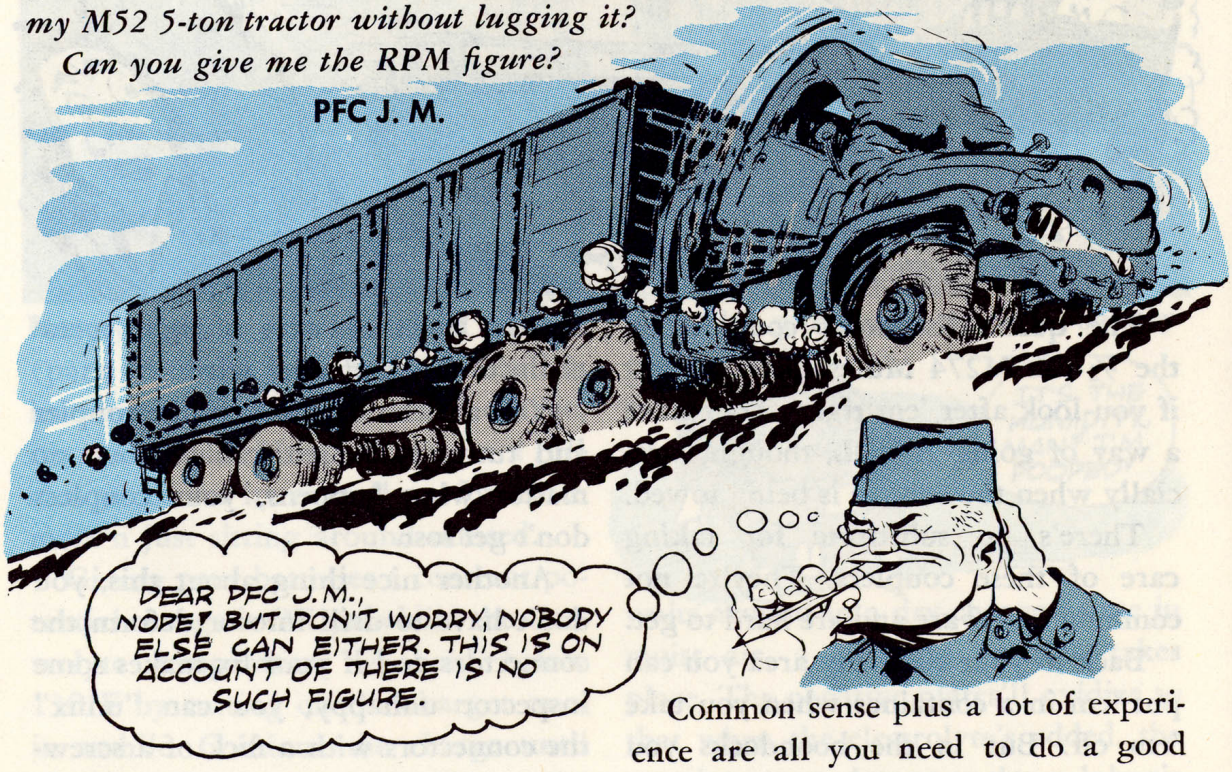
NEVER LUG IT

Dear Half-Mast,

I was a truck jockey in civilian life so I know lugging a truck is strictly No. 1 on the list of What Not To Do And How Not To Do It. The TM's don't give with much info, so I'm asking you. What is the lowest safe speed I can run my M52 5-ton tractor without lugging it?

Can you give me the RPM figure?

PFC J. M.



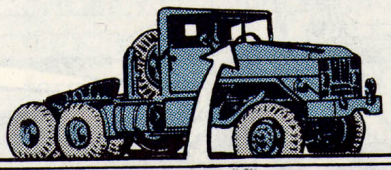
Your engine will lug at different RPM's depending on the type of terrain, load and road conditions. The data plate at the left of the instrument panel shows you the maximum truck speeds you're allowed when the transmission is shifted to its various positions . . . this dope is also in TM 9-8028 (June 55), page 21.

On page 66 of the same TM it says to shift to a lower gear as you start to lose speed or the engine begins to labor.

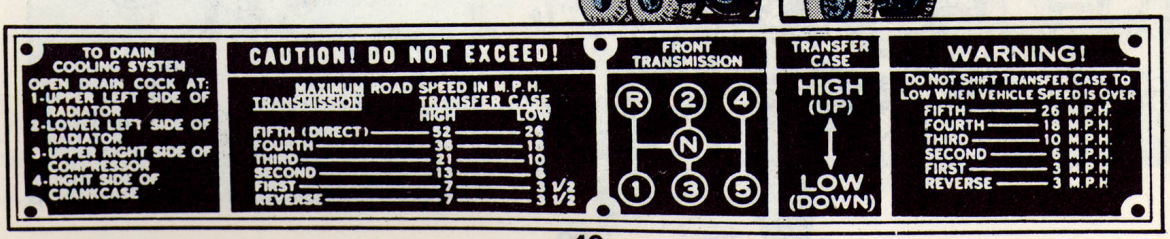
Common sense plus a lot of experience are all you need to do a good shifting job.

You can use the RPM data plate figures as kind of a rough guide, but the real payoff is your experience.

In time you'll get a **feeling** about upshifting and downshifting so you do the right thing without thinking about it. That's experience, and you can't buy it for all the gold in Fort Knox.



Half-Mast



ALL YOURS NOW

Been tearing your hair out wonderin' what'n world you can do with those nylon-type covered-wagon closures attached to some tracked vehicles you've been getting?

Has storing 'em become a bigger problem than stretching your pay through that last week of the month?

Then this refreshing bit of news ought to relax things a bit: A recent decision by the brass has made the closures expendable and non-accountable items.

So-o-o-o, you'll use 'em until their usefulness has been exhausted for the protection of whatever equipment or material you decide needs the protection the most.

They make a top-notch ammo shelter, and during bad weather make a good cover when any vehicle they'll fit gets shipped to another location. These are just two of many uses.

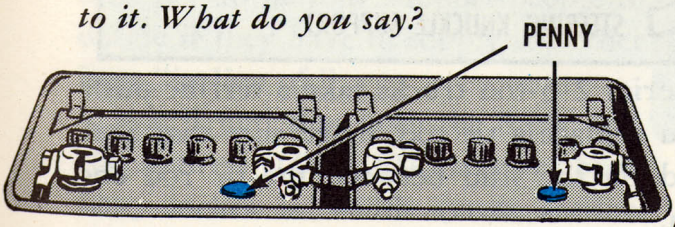
You decide where they're needed most and the closure'll do the rest.

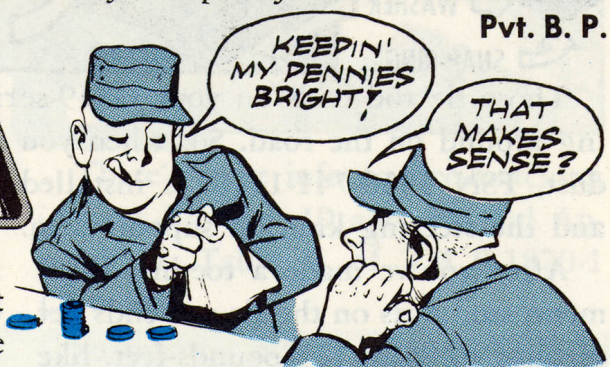
A BAD PENNY

Dear Half-Mast,

There's a guy in my outfit who says battery posts won't corrode, or corrode as fast, if you keep a penny near them. He says the penny'll draw the corrosion to it. What do you say?

Pvt. B. P.





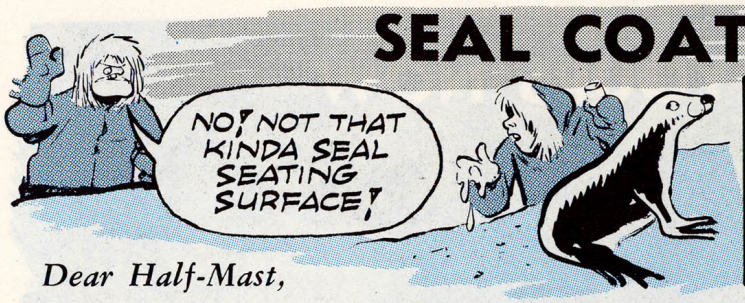
Dear Private B. P.,

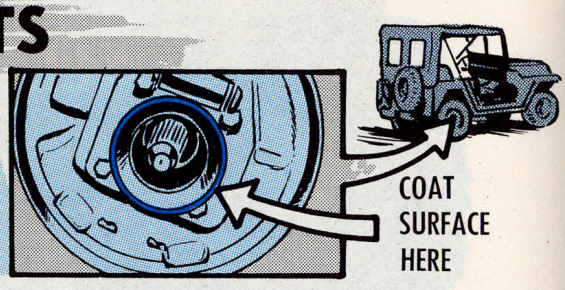
Well, now . . . I'll tell you. You put a penny on a battery and afterwhile it'll start turning green. It's bound to happen—since the rate of corrosion of copper is much greater than lead. A piece of copper close to the positive post will tend to cut down corrosion at the post . . . but only to a small degree.

Since the copper must be cleaned often to do any good, it's far better and practical just to clean the terminal itself. (You shouldn't be damaging coin-of-the-realm, anyway.)

Half-Mast

SEAL COATS





Dear Half-Mast,

I need some sealer compound to coat the outer face of the wheel bearing seals on my M151 ¼-ton truck. In TM 9-2320-218-20 (July 60), page 162, under Fig 106b it says, "Pack lips of seal with grease (GAA) and coat outer face of seal with sealing compound (MIL-S-54180).

Likewise in TM 9-2520-230-34 (Jan 61) step 6, page 66, it says to use this sealer (MIL-S-45180) on the outside of the seal to prevent leaks.

I'd sure be happy to do this if I could get ahold of the stuff. Can you find me a stock number and the authority for ordering it?

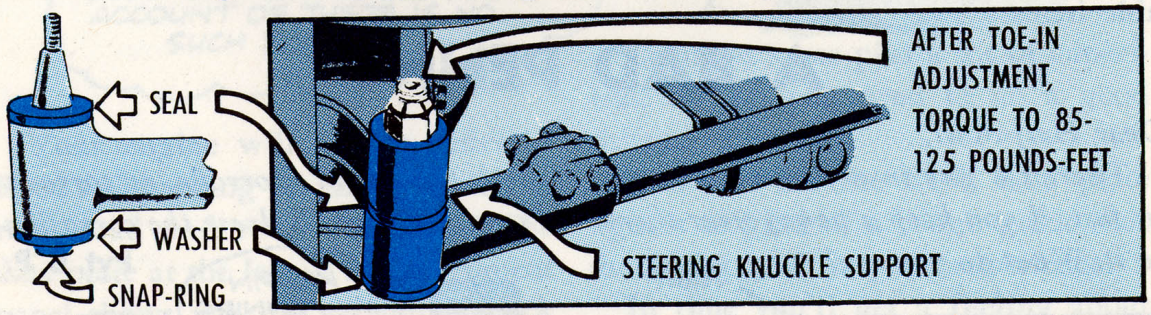
SFC W. X.

Dear SFC W. X.,

FSN 8030-656-1426 is the magic number that'll get you a one pint can of this sealer. You'll find it listed in Change 1 (Aug 62) to TM 9-2320-218-20 (July 60).

Half-Mast

TIE ROD TIE-UP



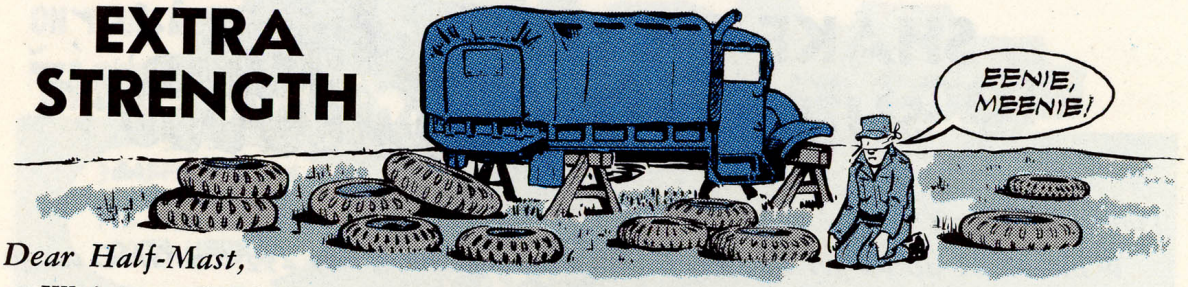
Those tie rod ends on your G749-series 2½-ton trucks take a terrific pushing around on the road. So, when you replace a tie rod, make sure that Seal, dust, FSN 5330-741-1418, is installed on the stud between the tie rod end and the steering knuckle support arm.

After you've made a toe-in adjustment, stud nuts on the tie rod ends get torqued to 85 to 125 pounds-feet, like it says in para 219b(6) of TM 9-8024 (3 Oct 55). This is the latest word, though you'll find a different answer in some older pubs.

There shouldn't be any play between the stud and the tie rod end. Fact is, if the bushing's loose in the tie rod end or if the stud's loose in the bushing, the tie rod end needs replacing.

LO 9-2320-210-10 (19 Jan 59) doesn't call for lubing the tie rod end studs, but a light coating of grease on the snap ring and washer and stud threads will help hold down rust and corrosion.

EXTRA STRENGTH



Dear Half-Mast,

We've received M211 and M220 2½-ton vehicles from depots with both 8-ply and 10-ply tires . . . sometimes on the same vehicle.

Is this kind of tire mixing OK even if one tire is a bit heavier?

CWO G. W. M.

Dear Mister G. W. M.,

Those mixed-ply tires may start some inspector walking . . . and talking in his sleep, Sir, but it'll do no harm. None, that is, as long as the dual tires don't have a difference of more than ½ inch in diameter when mounted and inflated. (This tolerance doesn't apply if they're mounted at opposite ends of the axle.)

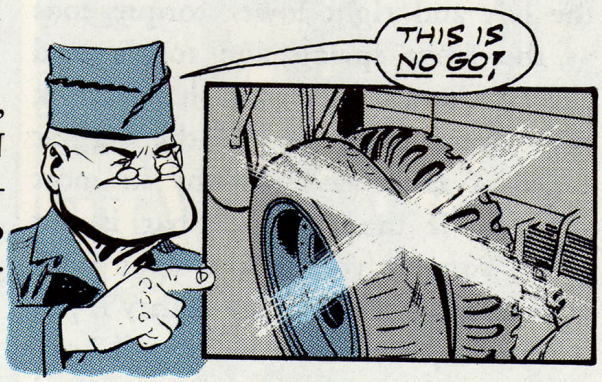
The 8-ply tire is preferred for these vehicles, but the 10-ply has more built-in strength.

Each kind has its own stock number, so just make sure you ask for the FSN listed in your vehicle's parts manual—then it's up to your support people to decide if they have to supply the other item "in lieu of."

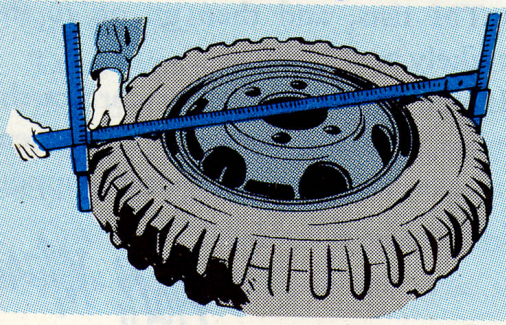
You'll find that both the 8-ply and 10-ply tires (9.00 x 20) measure about 10½ inches in width (cross section diameter) when properly mounted and inflated . . . but carrying a load. Even tires with the same size marked on 'em may vary a bit in width, tho.

Check para 258b of TM 9-8024 (3 Oct 55) and you'll note that it lists the tire size (9.00 x 20) but not the ply rating.

Points you want to watch in matching tires are the design, tread and wear, especially on those dual-wheel and all-wheel drive vehicles.



There's more info on tire-matching in para 27, Figs 19 and 20, and Appendix I, Table V, of TM 9-1870-1 (Feb 55).



So use the caliper, FSN 5210-605-7656, from your No. 2 common tool kit to match the diameters of the wheels on each vehicle. It pays in extra tire life and better vehicle performance.

Half-Mast

SHAKE THAT SHIMMY!!

Dear Half-Mast,

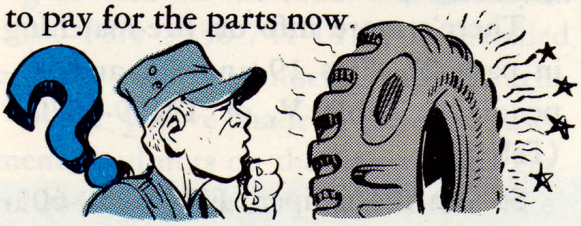
What can I do to get the front end shimmy out of my 2½-ton GMC cargo truck M135? We've tried everything in the troubleshooting section of TM 9-8024.

SFC R. E. M.

Dear Sergeant R. E. M.,

There are about 20 things that could cause shimmy in the front end of your deuce and a half, but the most likely is that the front suspension stabilizer bar was not installed like MWO ORD G749-W22 (8 Apr 55) called for. Check your DA Form 2408-5 in your Equipment Log Binder for the MWO and also have a look-see under the truck.

If the stabilizer bar is there, joining the left and right lower torque rods at the front spring and torque rod brackets, and it is in good shape, check your tires, 'cause they're the biggest cause of front end shimmy in most vehicles. If the stabilizer bar is not there, suggest you talk it over with your support unit and see if they'll put it on. They can do it but you'll have to pay for the parts now.



Like TM 9-8024 (Oct 55) says, unevenly worn or unequally inflated tires can cause shimmy. Unmatched or unbalanced tires, or tires not properly mounted and centered on the wheels, can also make the front end of your truck shake like a hula dancer.

The TM gives you loose or damaged hub bearings, incorrect front wheel alignment and worn steering knuckle components, as possible causes for shimmy.

Other things that might do it are wheels not properly seated because the taper on nuts or the wheel chamfer is worn or damaged, wheels out of round, broken, damaged, weak or defective front springs or hangers, loose spring U-bolts, shock absorbers and links defective or broken, loose or damaged torque rods, steering assembly loose on frame, steering gear not properly centered and adjusted, or backing plate bolts loose.

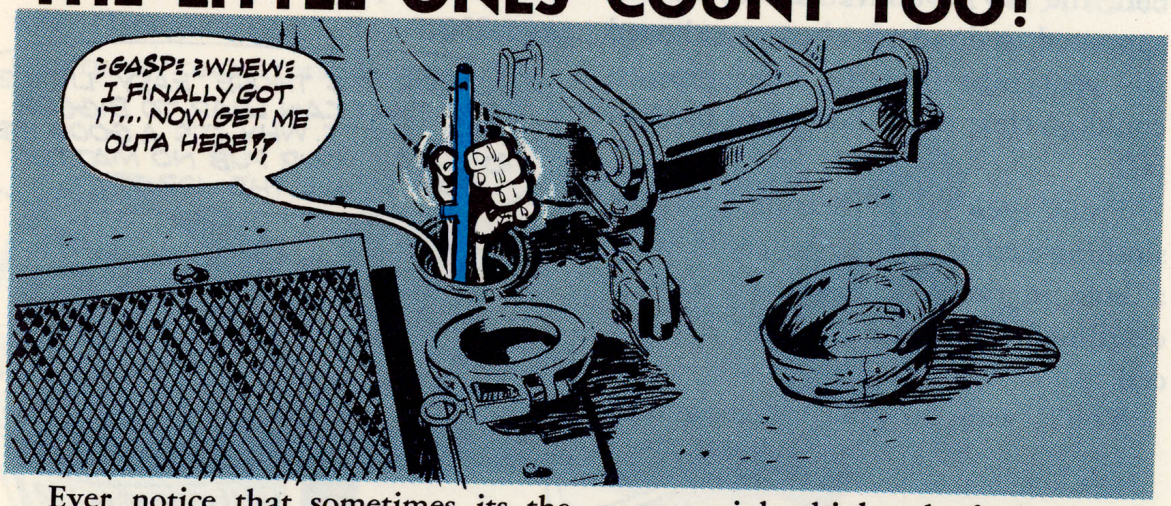
First check the most likely things, such as no stabilizer rod or tires not the way they should be. If this won't uncover the trouble, check the things the TM lists, and then go on to the less likely possibilities.

If you can't uncover or correct the trouble with the tools and equipment you have, call your Ordnance support for help.

Half-Mast

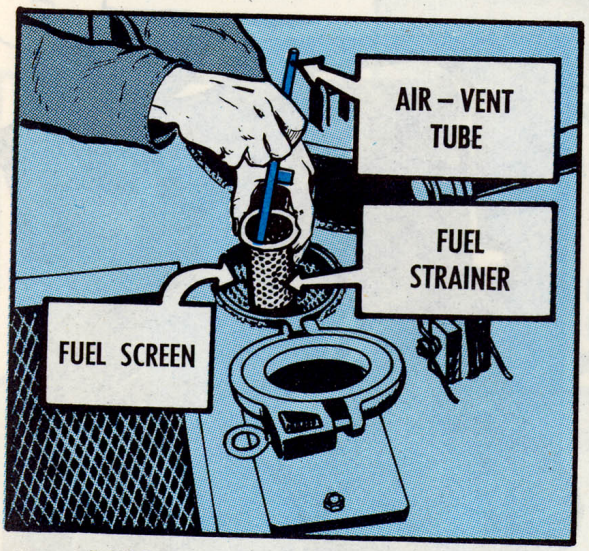
ON YOUR M59 AND M84...

THE LITTLE ONES COUNT TOO!



Ever notice that sometimes its the little jobs (not done right) that become the big jobs later on!

Take the removal and replacement of the fuel-filler-pipe air-vent tube in

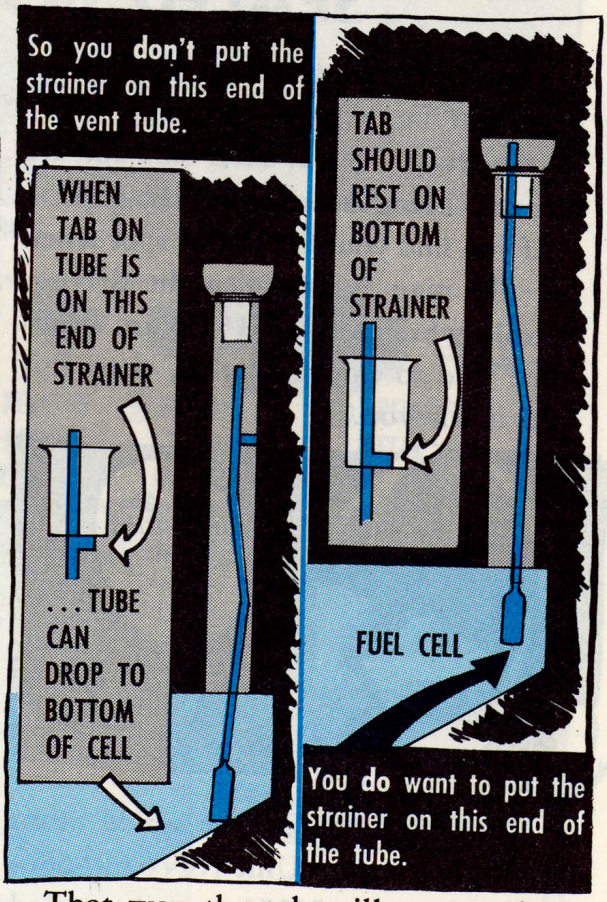


your M59 armored personnel carrier, or M84 self-propelled mortar. This is a simple enough job so why check the TM, you ask?

True, removal is a cinch.

But during replacement there's a tab on the tube you want to focus your baby blues on.

This small hunk of metal is not to support the strainer on the vent tube as you might think—the fuel screen in the filler pipe does that.



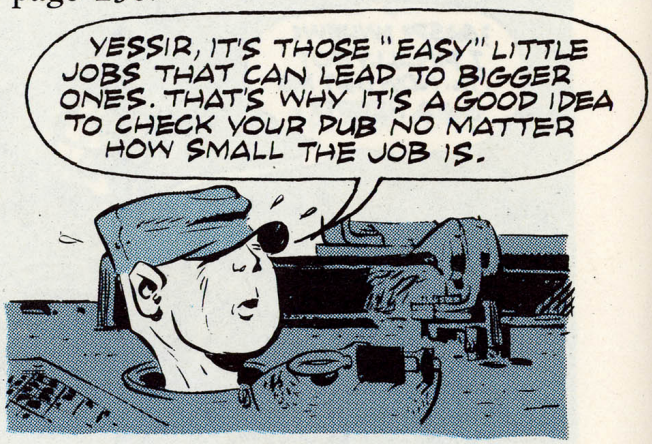
That way the tab will rest against the bottom inside of the strainer, so the tube can't reach the bottom of the cell when you're pushing it into the filler pipe.

PS MORE

If you put the strainer on the wrong end, the tab wouldn't do the job it's supposed to do. And when you shoved the vent tube into the filler pipe, it could go clear to the bottom of the fuel cell.

From then on, vibration and the sloshing action of the fuel could wear a hole in the cell. Result—a vehicle deadlined for replacement of a leaky cell.

You'll want to read all about this in TM 9-2300-203-12 (Oct 58), para 185, and rest your eyes on Fig 135, page 230.



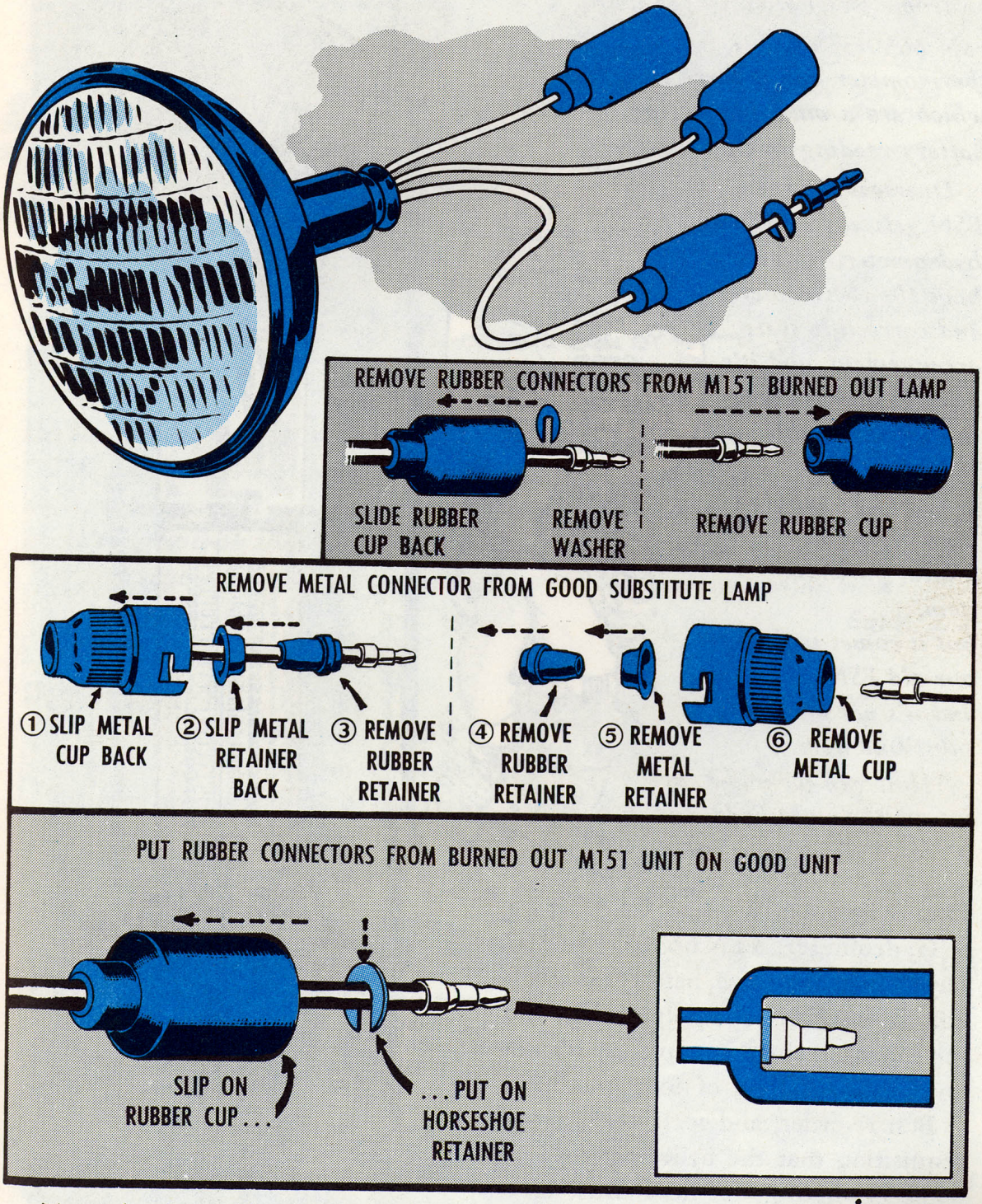
SEALED BEAM SWAP

How's the supply of sealed beam headlight lamp units for your M151 ¼-ton truck? Is your shelf bare and are due-outs being issued to fill the gap?

If you find yourself in this spot when the old man yells for night driving patrols while some M151's are deadlined due to no headlights, then this info is for you.

. . . until you can get the sealed beam headlights (Lamp Unit FSN 6240-686-4168) for your M151, use the sealed beam headlights unit (FSN 6240-385-7637 or FSN 6220-553-0688) that's used on the G740, G741, G742, G744, G749 and G758 series trucks.

You can make this substitute by changing the metal waterproof connectors (Douglas type) to the rubber waterproof connectors (Packard type). To do this you can use the rubber connectors on the burned out M151 sealed beam unit. Put the metal connectors in your electrical repair kit for future use.



To make the rubber connectors slip together without too much effort, put a light smear of electrical insulating compound (like DC4) on 'em; or use the cutting oil that's in your electrical repair kit.

TRUE HYDROMETER

Dear Half-Mast,

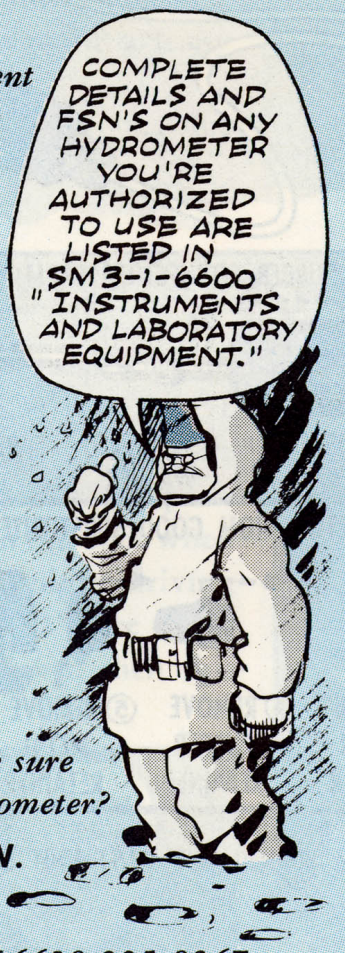
What's happened to the battery hydrometer we used to get with FSN 6630-335-0367? It had a thermometer and a correction table which are a must for getting the right battery reading in cold weather.

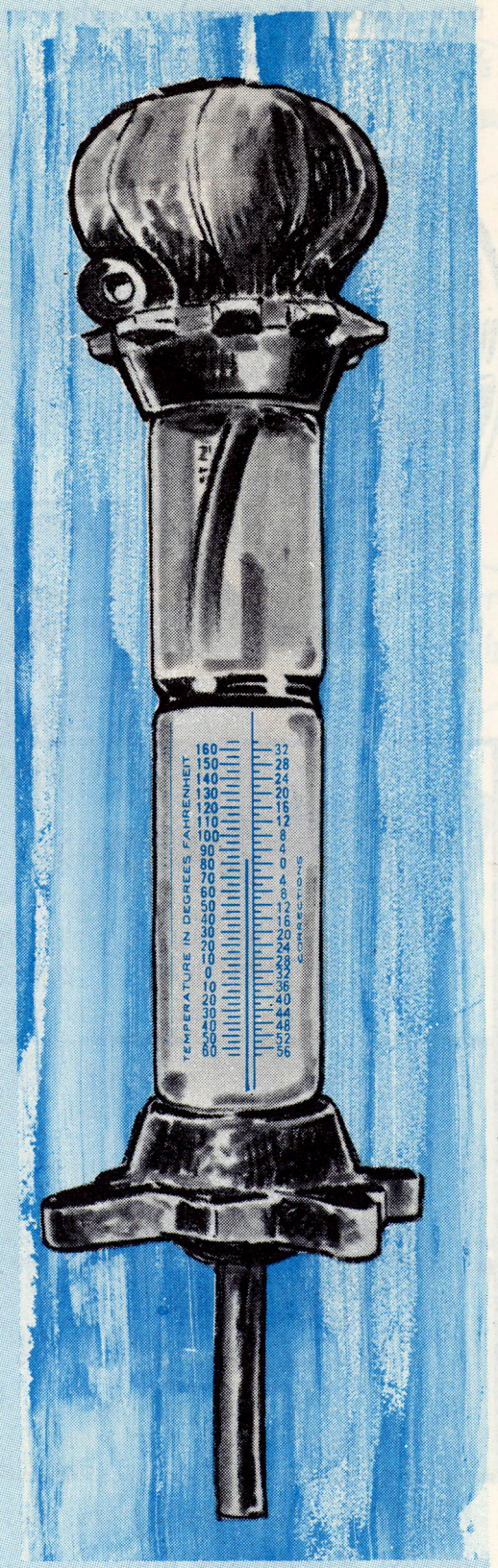
Overseas the same FSN gets you a different hydrometer. It doesn't have the thermometer and correction scale arrangement, and it's a fairly useless thing in our changeable climate.

Could be supply's been giving us a local purchase item, but it comes under our old FSN, and it's not marked substitute item.

How can we make sure we get the right hydrometer?

SFC J. W.





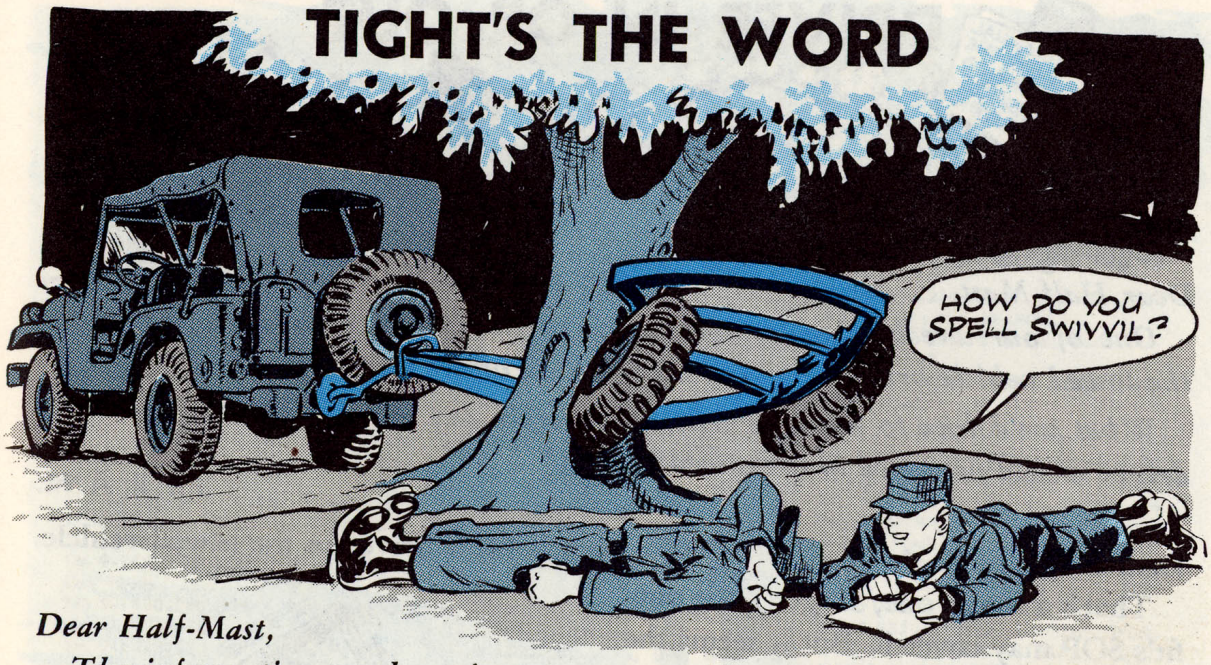
Dear Sergeant J. W.,

Hydrometer, FSN 6630-335-0367 (hydrometer, syringe, battery) is available from CONUS supply depots, and the Chemical supply people say it's not an authorized item of local purchase.

Best re-order, and spell out on your requisition that the hydrometer (FSN 6630-335-0367) you need **must** meet Federal Specifications GG-H-941, Class I, Style B.

Half-Mast

TIGHT'S THE WORD



Dear Half-Mast,

The information we have is not very specific on the correct adjustment on the lunette for the M104, M105 and M106 1½-ton trailer.

I claim the locknut should be drawn up tight so as to eliminate free movement, which would cause wear on the tapered shank and socket. My buddy doesn't agree with this. He wants free movement to allow for swivel action.

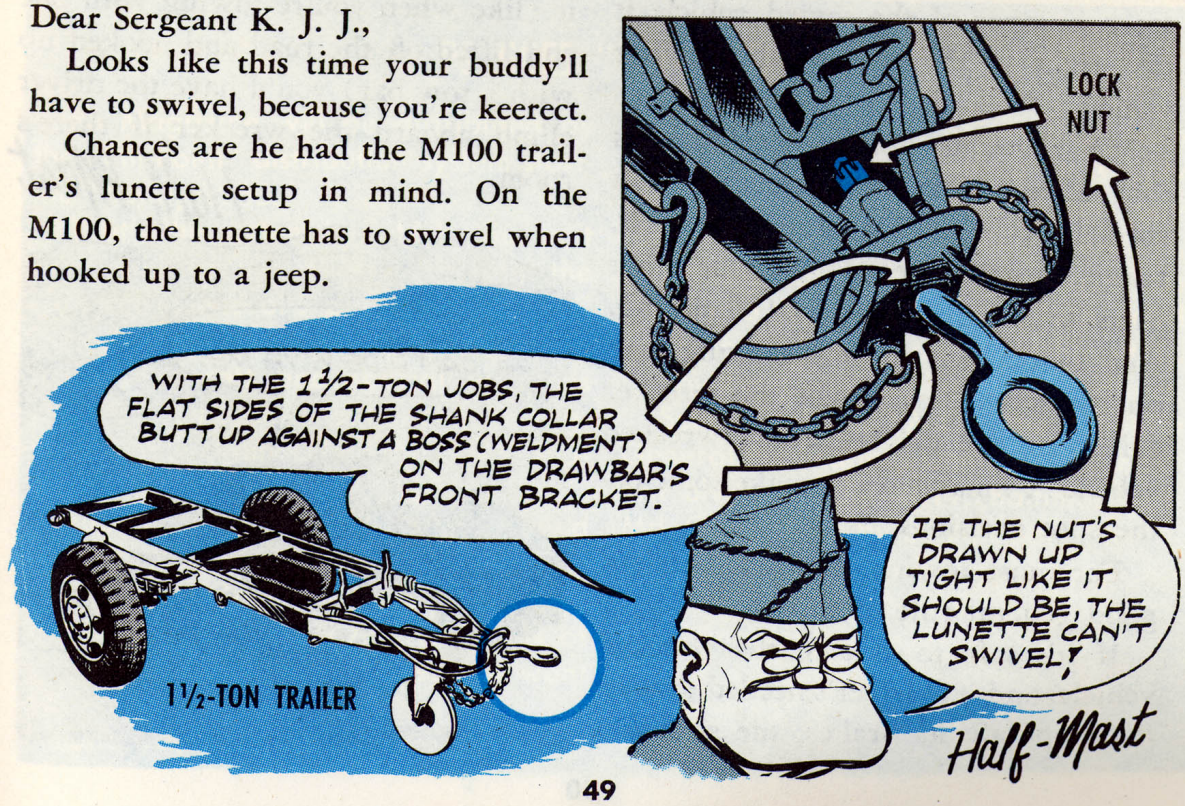
Who "swivels" on this argument and what is the correct adjustment?

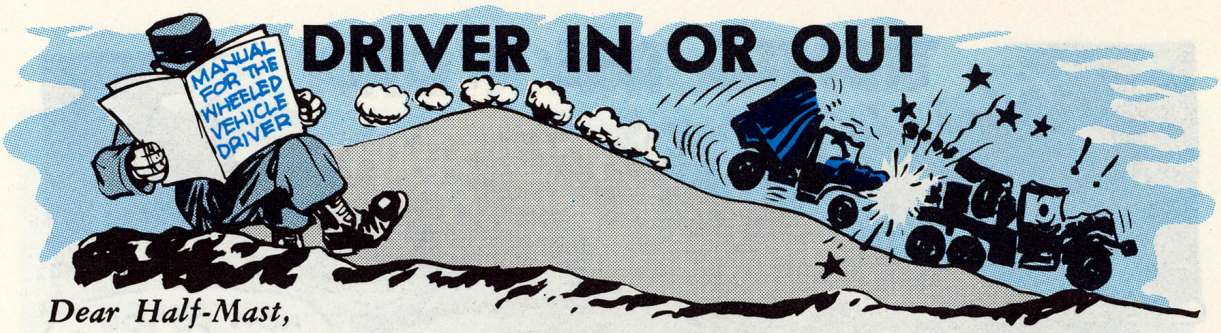
Sgt K. J. J.

Dear Sergeant K. J. J.,

Looks like this time your buddy'll have to swivel, because you're keerect.

Chances are he had the M100 trailer's lunette setup in mind. On the M100, the lunette has to swivel when hooked up to a jeep.





Dear Half-Mast,

One of our wreckers was towing a wrecked vehicle with a tow-bar when the towed vehicle broke loose and hit the back of the wrecker.

What we'd like to know is whether there's any AR or TM that says the driver should've stayed in the towed vehicle?

Sgt. R. A. M.

Dear Sergeant R. A. M.,

That's a tough one, Sarge. Your outfit's SOP may cover it. But it seems the only Army pub that lays down a general rule on this point is TM 21-305, the wheeled vehicle driver's manual.

Para 64d of this TM calls for a driver in the towed vehicle to control it in some cases. But drop down to para 64e and it says a driver in the towed vehicle is not needed when the front bumper of the towed vehicle is tied tight to the rear of the towing vehicle.

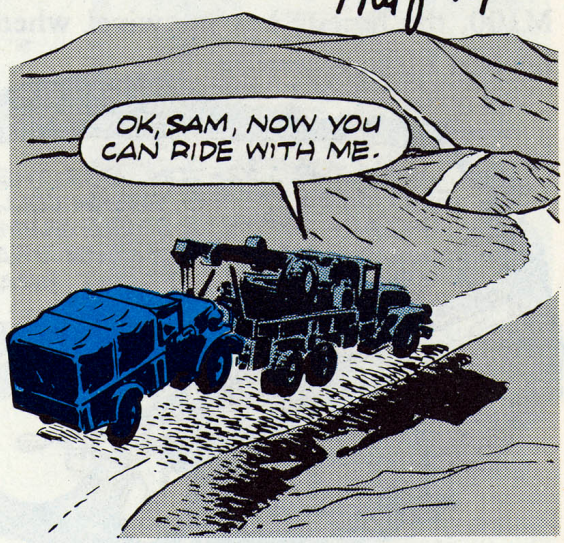
What you've got to remember is that each wrecked vehicle can be a special problem. Damage to wheels, frame, steering gear, brakes or other parts may call for special handling. And that means the top-ranking man on the scene . . . maybe the wrecker driver or the driver of the wrecked vehicle . . . may have to make some on-the-spot decisions.

For most towing, though, here's a good general rule of thumb:

If it's safe to ride in the wrecked vehicle, and if a driver's needed to steer it or operate its brakes, the situation calls for a driver in the towed vehicle.

But if it's unsafe to ride in the towed vehicle, or if there's no need to control it (like when you're towing with one end lifted off the road and hooked up with a tow bar) you'd have the driver climb aboard the wrecker if there's room.

Half-Mast



A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletins. For complete details see DA Pam 310-4 with latest changes.

TECHNICAL MANUALS

TM 5-541, Jan, Control of Sails in Construction.

TM 5-2330-208-15, Dec, Trailer Bolster: 2½ Ton Mil Spec T-1286.

TM 5-3431-203-15, Dec, Welding Machine, Arc, Inert Gas Shielded: Midstates Model MAG 300.

TM 5-3805-210-20P, Dec, Grader, Road, Huber-Warco Model 4D.

TM 5-3825-214-15, Dec, Distributor, Water, Tank, Rosco Model MSE.

TM 5-4310-241-15, Jan, Compressor, Reciprocating: Champion Pneumatic Model LP-512-ENG.

TM 5-4310-242-15, Dec, Compressor, Reciprocating: Champion Pneumatic Model LP-832-ENG.

TM 9-1430, 250-12P/3/2, Jan, Nike-Con Equip.

TM 9-1430-250 12P/5/2, Jan, Nike-Hercules Con Equip.

TM 9-1430-250-12P/8/1, Jan, Nike-Hercules (Imp), Con Equip.

TM 9-1430-250-12P/10/1, Jan, Nike-Hercules (Imp), Con Equip.

TM 9-1430-250-12P/11/1, Jan, Nike-Hercules, TMP, Con Equip.

TM 9-2330-267-14P, Jan, Trailer, Tank, Water 1½ Ton, M149.

TM 10-1102, Jan, Petroleum Handling, United States.

TM 10-1103, Dec, Petroleum Handling Equipment.

TM 10-1670-214-23P, Jan, Parachute, Reserve, Type T-7A, T-10.

TM 10-8340-203-10, Jan, Hawk, Tentage.

TM 11-5805-243-20P, Dec, Telephone Set TA-1/PT.

TM 11-5805-248-20P, Dec, Power PP-826/U & PP-826A/U.

TM 11-5820-477-20P, Dec, Radio Set Control Group AN/GRA-39.

TM 11-5820-499-20P, Dec, Radio Set, AN/GRC-125.

TM 11-5820-501-20P, Jan, Antenna Group AN/FRA-53.

TM 11-5840-255-12P, Dec, Controller Group OA-4000/MPQ-4A.

TM 11-5895-294-20/1, Dec, Coder-Decoder Group OA-2789/TSQ-38.

TM 11-5995-200-25P, Dec, Telephone, Cable Assembly CX-1606/G.

TM 11-6625-537/15, Dec, Differential Voltmeter ME-202/U.

TM 11-6625-544-12, Dec, Power Supply PP-3690/GPM.

TECHNICAL BULLETINS

TB 9-2300-203-12/4, Dec, APC M59.

TB 9-2300-216-10/1, Dec, Gun SP M107 Howitzer SP M110.

TB 9-2300-224-10/2, Dec, APC, M113.

TB 9-2320-206-10/5, Dec, Truck 10 Ton, M125.

TB 9-2320-208-10/1, Dec, Truck, ¼-Ton G-758 Series.

TB 9-2320-209-10/1, Dec, Truck, 2½-Ton G-742 Series.

TB 9-2320-209-10/2, Dec, Truck 2½-Ton G-742 Series.

TB 9-2320-210-10/2, Dec, Truck 2½-Ton G-749 Series.

TB 9-2320-211-10/1, Dec, Truck 5-Ton G-744 Series.

TB 9-2320-211-10/2, Dec, Truck 5-Ton G-744 Series.

TB 9-2320-218-10/2, Dec, Truck ¼-Ton M151.

TB 9-2320-222-10/1, Dec, Recovery Vehicle M88.

TB 9-2320-235-10/1, Dec, Truck 2½-Ton M35A1.

TB 9-2350-201-12/2, Dec, Tank, Light M41A1 Series.

TB 9-2350-205-10/1, Dec, Tank Medium M48, M48A1.

TB 9-2350-208-10/1, Dec, Tank Medium M48A2.

TB 9-2350-209-10/1, Dec, Howitzer SP M52, M52A1.

TB 9-2350-210-12/1, Dec, Gun, SP, M53 & Howitzer SP M55.

TB 9-2350-224-10/1, Dec, Tank, Medium M48A3.

TB 11-284/7, Dec, Radio Set AN/GRC-3, Installed in APC.

MISCELLANEOUS

LO 5-4310-229-20, Dec, Compressor, Rotary: Air, Davey Model M-210-RP.

LO 9-2320-210-12, Dec, Chassis 2½ Ton 6X6, M133, M207, M207C, and M209; Truck, 2½ Ton 6X6, M135, M211, and M215, M217, M217C, M220, M220C, M220D and 238; Truck Tractor, 2½ Ton 6X6, M221.

LO 9-2320-212-12, Undated, Truck, ¾ Ton M37, M37B1, M56, M56C, M56B1, M43, M43B1, M201, M201B1, V-41 GT.

MWO 9-1440-500-20/15, Jan, Hawk, Ground Handling.

MWO 9-1450-500-20/10, Jan, Hawk, Vehicles.

MWO 9-2320-218-20/8, Dec, Truck, M151, Relocation of Rear Panel Reflector and Back Curtain strap Fastener Loop.

MWO 9-2350-215-20/12, Dec, Tank, M60; Inst of Cap on Xenon Searchlight Harness.

MWO 9-2350-215-20/14, Jan, Tank, M60; Inst of Dome Light Controls.

PS GOES "PIN-POINT"

PS Magazine will be distributed by the "Pin-Point" distribution system starting 15 May 1963.

That's the system by which your unit gets pubs mailed direct to it from the Adjutant General's publications distribution center—like you've been getting missile, aircraft and special weapons pubs for some time now under the provisions of Section III, Chapter 3, AR 310-1 (20 Mar 61).

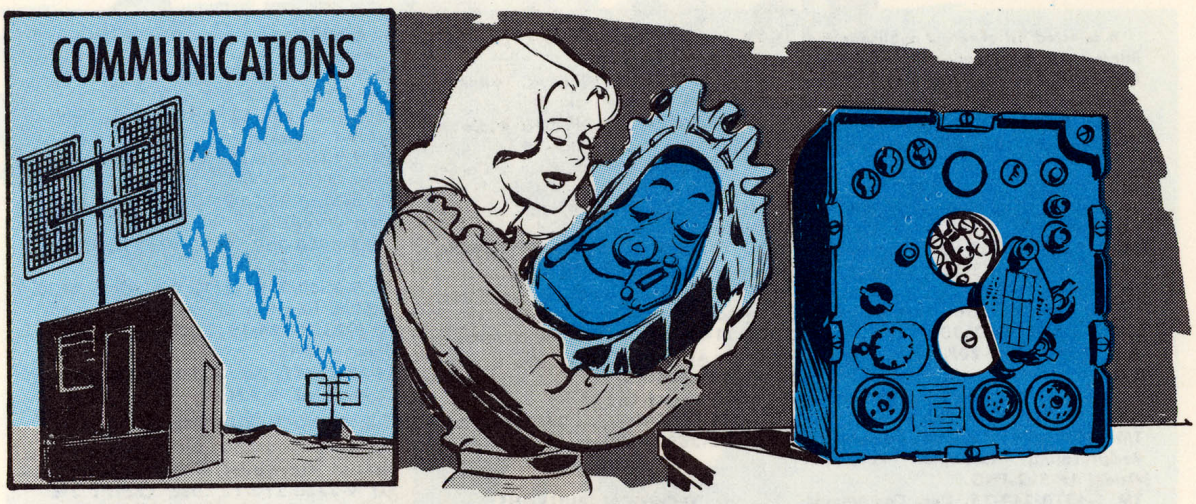
First, tho . . . your outfit's got to send in immediately a DA Form 12-4 to the pubs center. On it you order the number of copies of PS Magazine (and lots of other pubs . . . like DA Indexes) you want your unit to receive regularly.

One way to figure out how many you need goes like this: One copy for each organizational maintenance or supply officer, non-com and specialist, one copy for every three equipment operators, 3-5 copies for your unit's headquarters staff, and whatever is actually needed for schools, boards and field hospitals.

You'll get your copies by mail, direct.

Send the Form 12-4 to the Adjutant General Publications Center, 2800 Eastern Blvd., Middle River, Baltimore 20, Md. Get it there by 30 Apr 63.

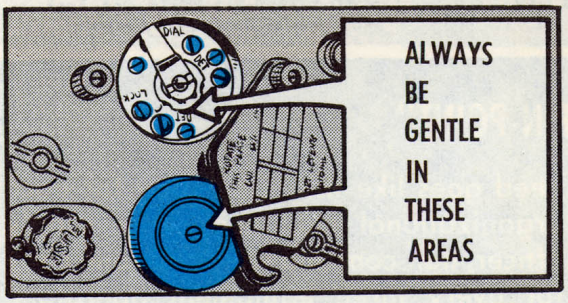
Read all the details on this new distribution in DA Circular 310-57 (14 Mar 63) "Pinpoint Distribution of Department of the Army and Other Administrative Publications Except Regulations and Circulars."



LIGHT TOUCH FOR AN R-110

Like a baby or a babe, the dial drive assembly on your R-110 radio receiver responds better to a caress than to a strong hand. Ditto for the R-108 and R-109.

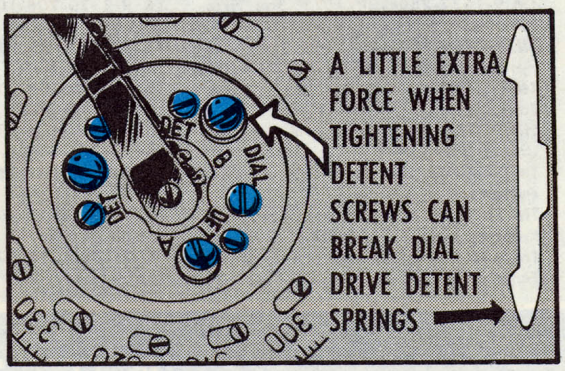
The light touch is a must with the detent locking screws and the TUNING Control. A little heavy-



handedness with those and you can put yourself out of business fast.

The assembly is an expensive, complicated item, and it takes some time for upper echelon mechanics to get it back to you. Most of the time it has to be replaced completely when one or more of its closely fitted, small parts goes.

F'rinstance, the detent locking screws (DET A, B, C), which turn clockwise to lock. When you feel them engage, that's it! A little extra force can break the dial drive detent springs.



Before turning the dial, make sure the locking screws are disengaged (counterclockwise). The detent springs'll go if you force the dial. And never spin the dial. The detent springs keep you from overshooting, and a fast dial twirl can bust 'em up.

Handling the dial and locking screws the right way is just about the difference between your babe running her hands through your hair . . . or giving it a hard yank.

TM 11-898 will give you the dope on avoiding trouble, no matter whether your receiver is in the AN/GRC-3, 5 or 7; VRC-16, 17, 18, 20, 21 or 22.

KEEP THE IM-93/UD CLEAN

Radiacmeter IM-93/UD is just about pen-size, and like a pen it can be mightier than a sword—in protecting you against radiation hazards.

That tiny dosimeter takes only a little maintenance, but what it does, it needs in a bad way—if you're going to get effective use of it.

First off, you've got to keep the charging socket clean—free of water, dirt, moisture, dust and anything else that doesn't belong in there. A dirty socket makes the dosimeter's electric cell leak faster than it should. Fact is it leaks right out of being useful.

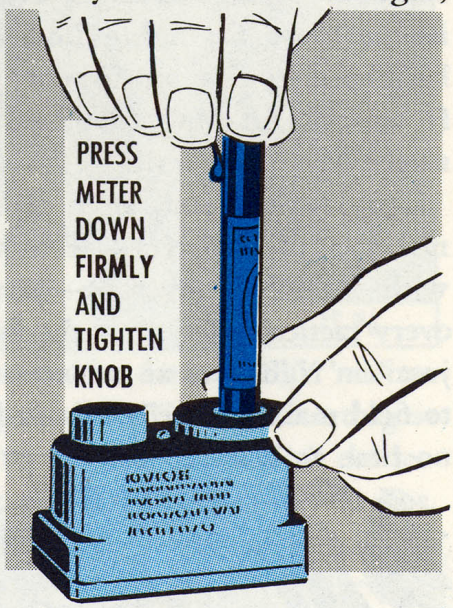
A good warning that a cleaning's overdue is when the leakage is more than three roentgens a day.

Best way to clean the socket is with denatured alcohol or a mild detergent. Make sure you get it dry. (Use air drying procedure only!). The protective cap helps keep the socket clean, and tho it ain't positive protection against dirt and the like, it helps considerably.

Another thing a dirty socket does is keep the radiac detector charger (PP-630A/PD for the IM-93) from working right.

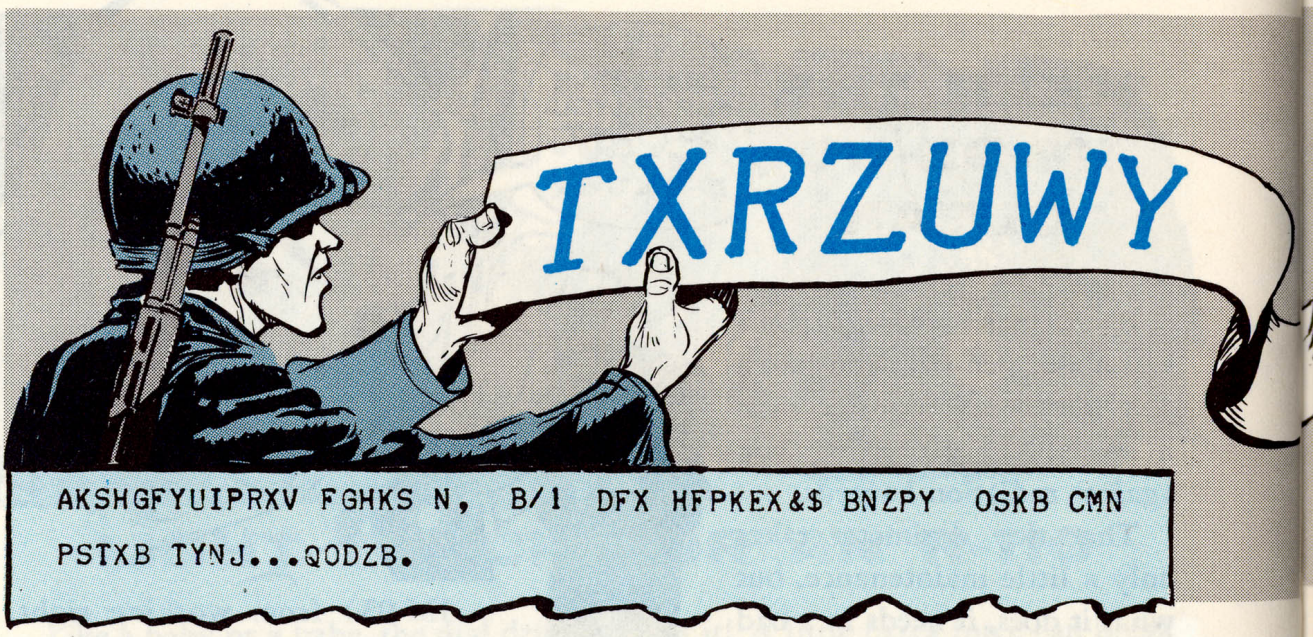
And don't get careless with the dosimeter—dents, cracks or breaks can damage the inner electro meter and snuff out your protection.

When you put the dosimeter into your detector charger,



hold the meter real firm till the knob is tight. That way you get solid contact.

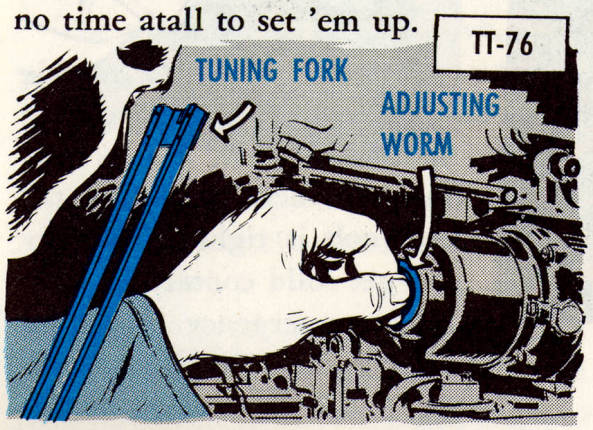
For emergency charging without the PP-630A see TB SIG 226-9 (8 Oct 58).



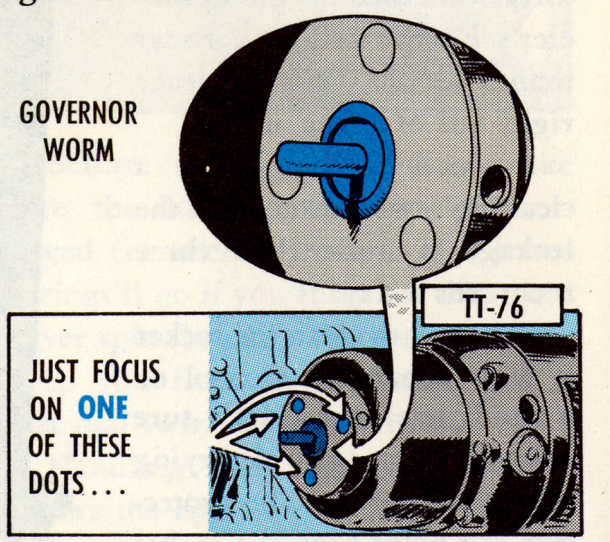
Nosiree. Tain't no new language—them's words. Translated, they mean: "This operator didn't adjust his teletype motor speed and range dial . . . first!"

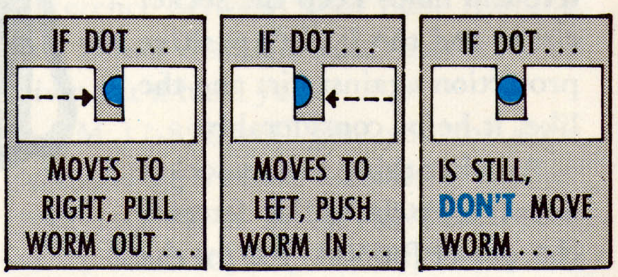
When you don't adjust 'em, out comes the same kind of garbled gibberish as those beginning lines. If they happened to be an urgent message from the Old Man, somebody's hide might be on the wall.

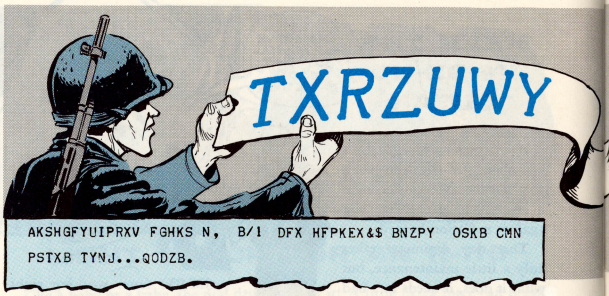
Motor speed and range dial adjustments apply to every teletypewriter with a motor governor—just about every tactical teletype in the field. Adjust 'em right and an unnecessary trip to field maintenance'll be saved. Takes no time atall to set 'em up.



On motor speed (for 60 wpm), let the motor warm up for a minute or two. Take the set's tuning fork and tap it on your hand to vibrate it. Look thru the slots of the fork shutter at one of the white dots on the governor target, and if the dot seems to be still, quit right there.







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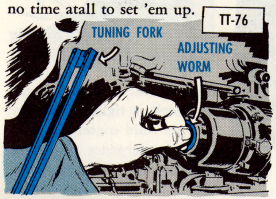
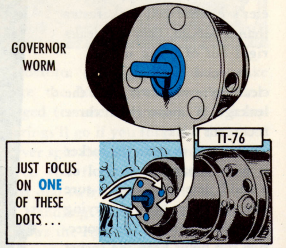
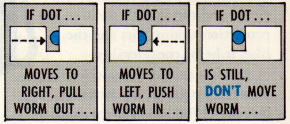
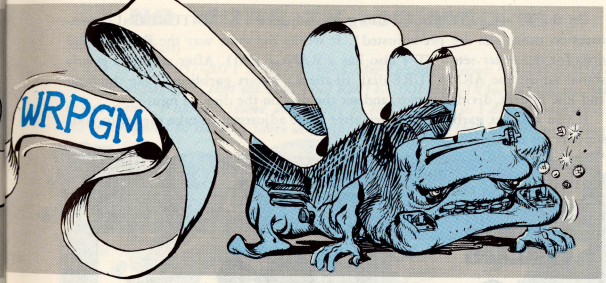


On motor speed (for 60 wpm), let the motor warm up for a minute or two. Take the set's tuning fork and tap it on your hand to vibrate it. Look thru the slots of the fork shutter at one of the white dots on the governor target, and if the dot seems to be still, quit right there.



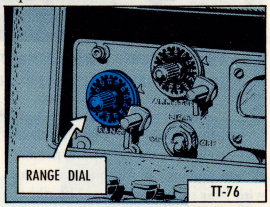




If the dot appears to be moving to the right, pull the governor worm out gentle-like 'til the dot stops. If it's moving left (counterclockwise) push the worm in slowly 'til the dot appears to stop. Best deal is to release the worm just as the dot seems to stop, so's you won't overadjust. If the worm's a little hot to handle, use a glove or a rag.

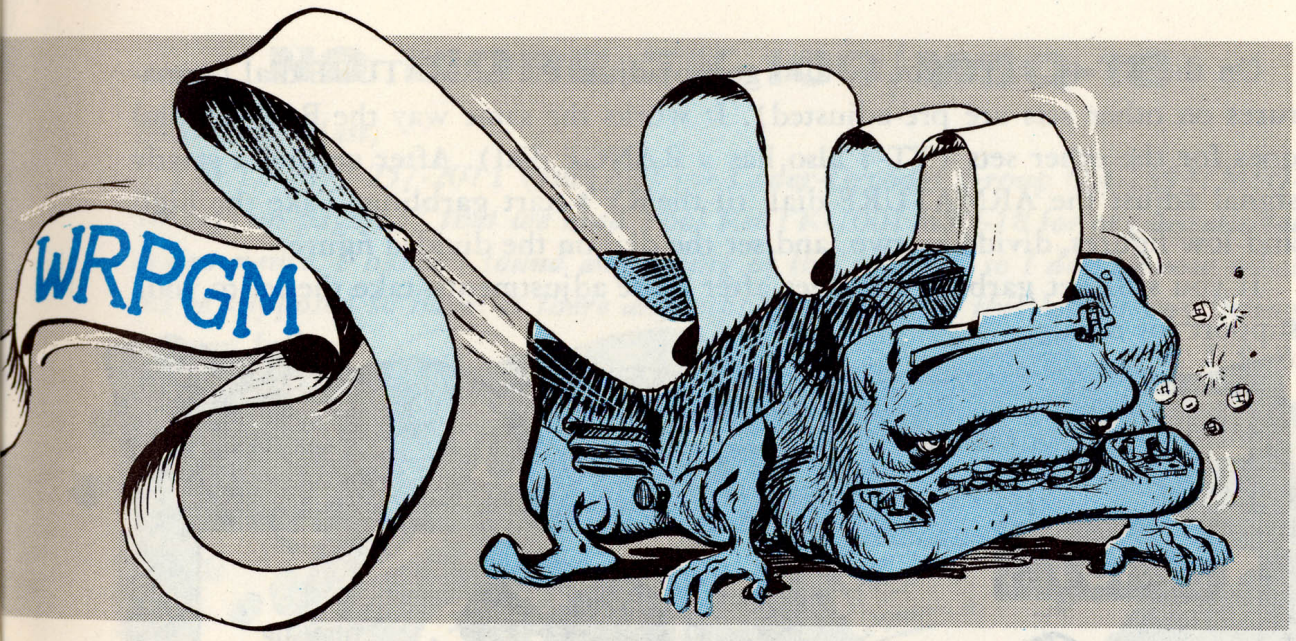
Use your fingers on the worm—not pliers or other tools. Tools burr the worm and cut your fingers or those of the next guy who adjusts the motor speed. The cuts, 'specially from the plastic worm, are painful and take a long time to heal.

If the worm jams, never try to force it loose. Take the teletypewriter to your support people soonest, so's you won't make a major job out of a minor repair.



Test with the letters "RY" when adjusting the RANGE dial. Starting at Pos. 60, turn the dial down 'til the letters start getting garbled (say at Pos. 20). Make a note of the 20, and turn the dial all the way up 'til the teletypewriter garbles at the other end of the scale, say Pos. 100. Add the high and low point figures, which make 120, and divide by two. You get 60, which is where you set the RANGE dial for best operation.

MORE



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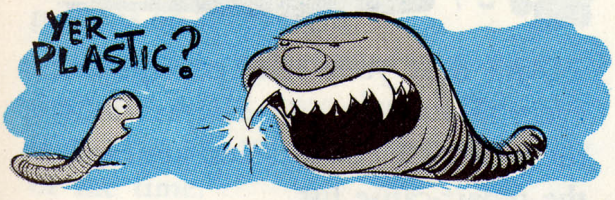

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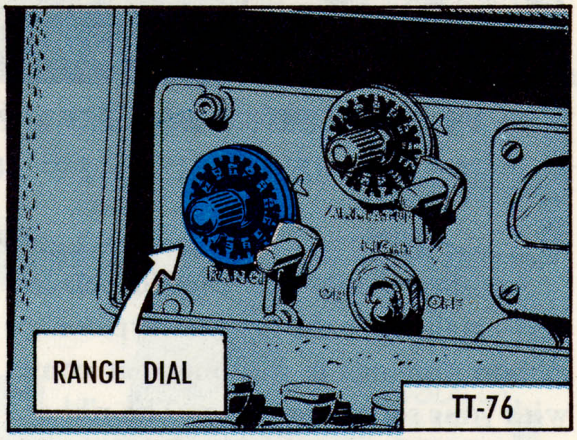

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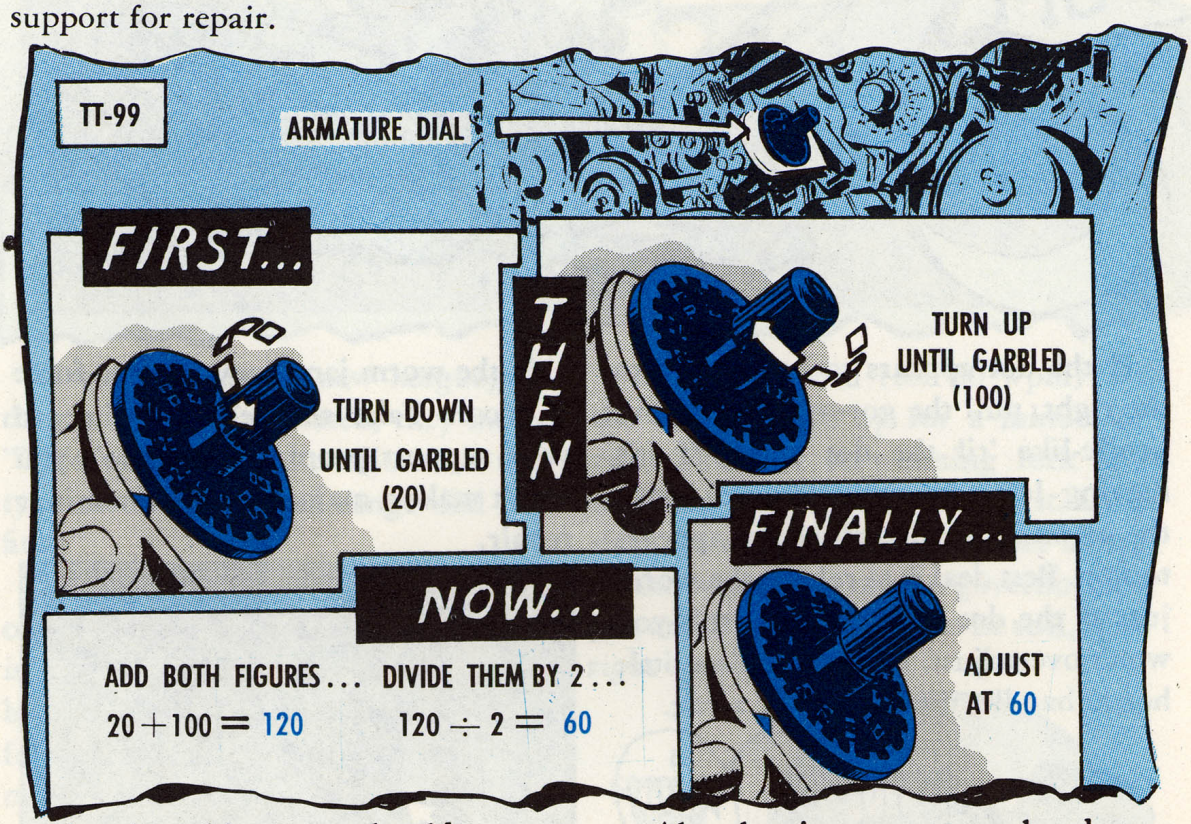
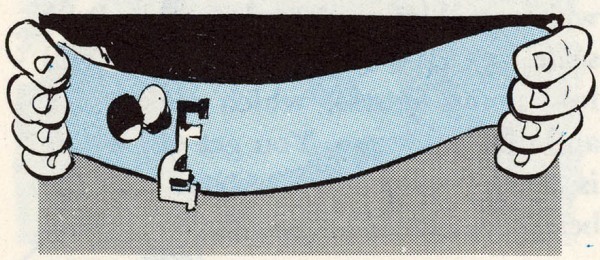
PS MORE

On the TT-4( )/TG you've also got to adjust the ARMATURE dial (armatures on other sets are pre-adjusted). It works the same way the RANGE dial does for the other sets (TT-4 also has a RANGE dial). After getting a steady signal adjust the ARMATURE dial 'til the RY's start garbling. Take the high and low figures, divide by two, and set the dial on the divided figure.

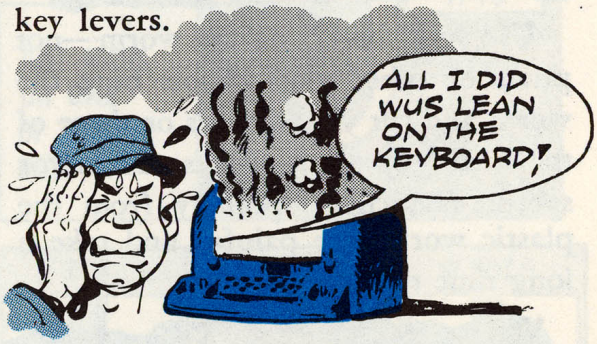
If you still get garbled messages after those adjustments, take the set to your support for repair.



Another thing you should remember—make sure the only teletypewriter ribbon you use is the one that comes with your set's spare parts. The ribbons for the various sets aren't alike. Interchange 'em, and most of the time they won't work right. It's good to change ribbons when they get a little light. Using 'em 'til you start choppin' holes in 'em don't do anybody any good.



Also, leaning an arm or hand on a keyboard while the set's on (or off) sets so many things in action that about the least you'll get away with is bent key levers.



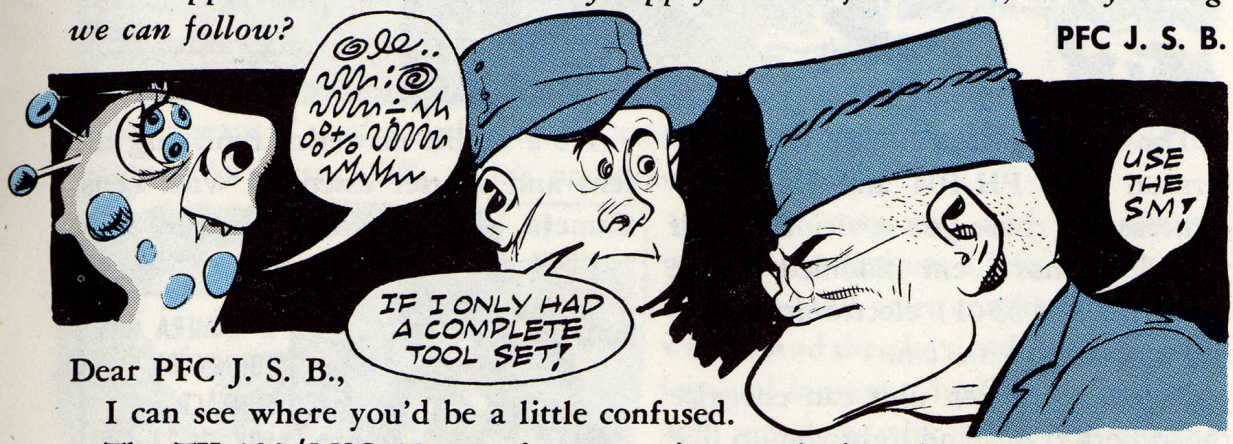
And dust your teletype equipment every day. Dust and dirt are among the worst TT enemies and are high on the repair-cause list.

NO MORE TK-100/MSQ-18

Dear Half-Mast,

TM 11-5895-257-20/1 (July 60) for Coder-Decoder Group OA-1593/MSQ-18 says on page 157 that we need Tool Kit TK-100/MSQ-18 for organizational maintenance. I haven't found any listing of this tool set, so I don't know what we're supposed to have. Is there any supply manual for this kit, or any listing we can follow?

PFC J. S. B.



Dear PFC J. S. B.,

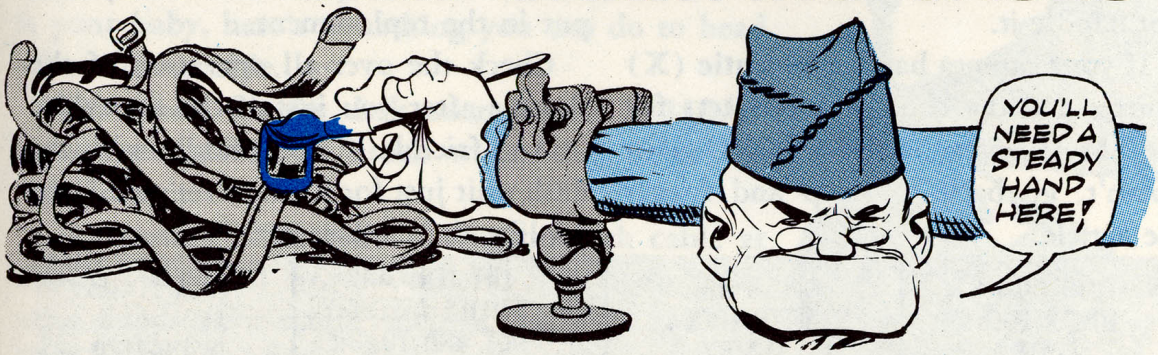
I can see where you'd be a little confused.

The TK-100/MSQ-18 was the name given to the kit when it was assembled for issue with the first CDG's. It has now been pinned down and given the nomenclature Tool Kit TK-100/G, and listed in SM 11-4-5180-S21 (19 Oct 61).

Some changes were made in the kit, so there's no sweat if your tools don't line up with those in the SM. Use the SM as your authority and bring your kit into line with it.

Half-Mast

FOR COMM CARRYING CASES



Keeping the grommets, buckles and tabs on your canvas comm cases gig-proof is no snap, right?

The brass or steel hardware can corrode in a hurry, even though the accessory bags are stored away neatly most of the time.

To save yourself lots of sweat, put a light coat of black enamel on the hardware. You've got to be real neat about it to keep the paint off the canvas, of course. But it should end your worries for a year or so.

CAMERA SHOCKERS

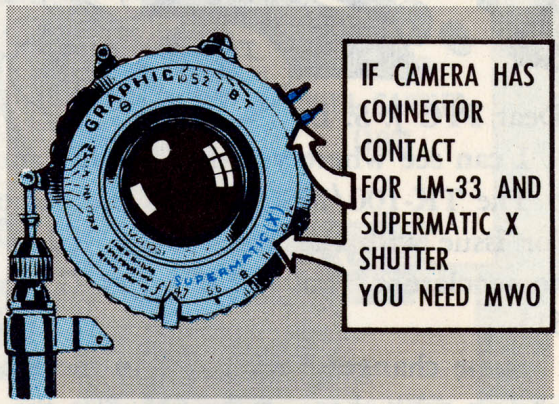
The Graphic **Supermatic** (X) shutters on your PH-104 and KS-4A(1) cameras can cause you a vicious jolt if you don't have 'em modified before using the LM-33(1) electronic repeating flash unit with 'em.

Fact is, the flash unit can energize the camera frame and light you up like a neon sign . . . or worse. It's a real shocker.

That urgent MWO 11-6720-220-13/1 (24 July 62), applies only to the PH-104 and the KS-4A(1) cameras with the **Supermatic** (X) shutter, providing they haven't been modified by MWO 11-6720-219-45/1. First, second or third echelon maintenance people can handle it.

If your camera has **Supermatic** (X) shutter and the connector contacts for the LM-33—you need the MWO. If it doesn't, go back to sleep and forget the article.

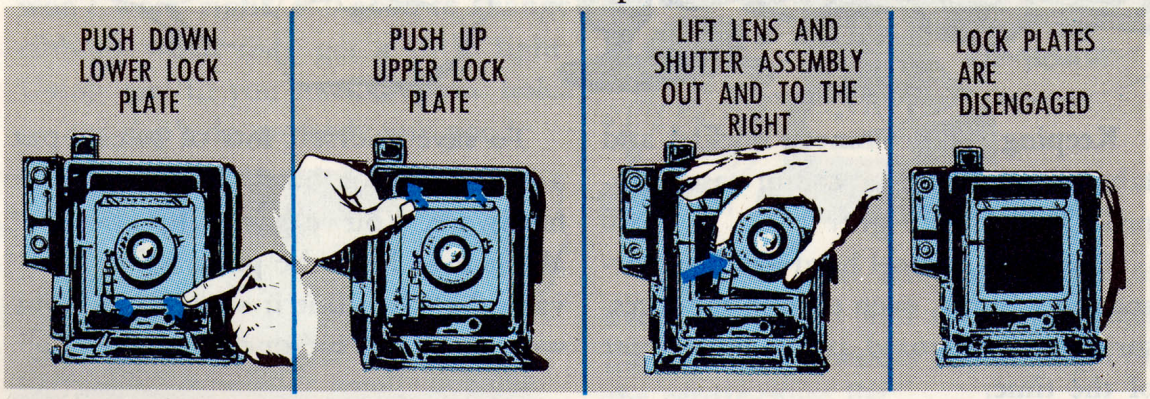
It's a simple matter of replacing the lens and shutter assembly with Lens, Camera, General Photographer, FSN



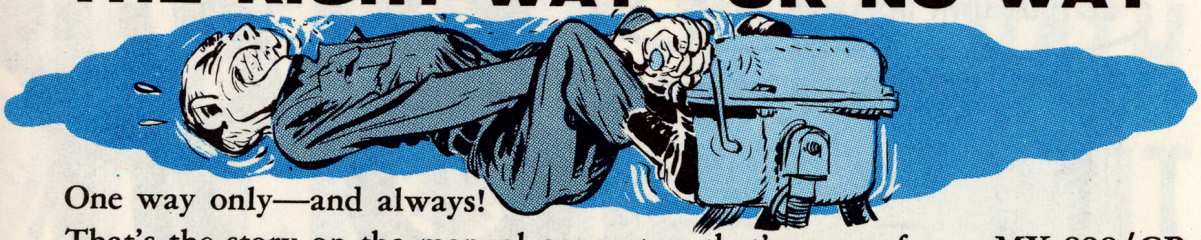
6760-240-6918. The replacement lens assembly has a special resistor for the LM-33. It takes just a couple of seconds to take out the present assembly and put in the replacement.

Check the over-all operation of the shutter after you install the assembly.

And friend . . . don't fiddle with the flash unit just for kicks. You could end up like the curious cat.



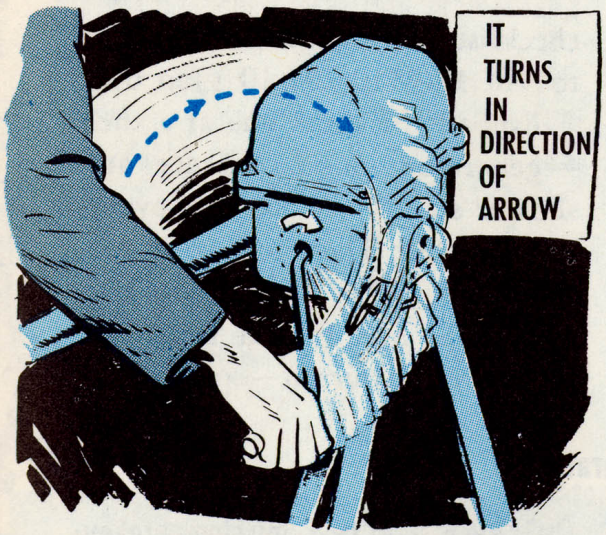
THE RIGHT WAY— OR NO WAY



One way only—and always!

That's the story on the manual generators that're part of your MX-898/GR modification kits.

They're set up to turn in the direction of the arrow on the side—or top. Which means if you're sitting on the seat properly your right hand should be turning clockwise. (OK, so it's not exactly clockwise.)



It's the easy way and the natural way. But sometimes a lefty—or maybe a joker—will start crankin' her backwards. And then he sits there all breathless and innocent, huffing and puffing, and wonders why she's not putting out.

The thing is, the generator's all wound up to work only the one way—and any other way not only won't work, it could put her out of whack for good.

FOR DESK MIKE CABLES

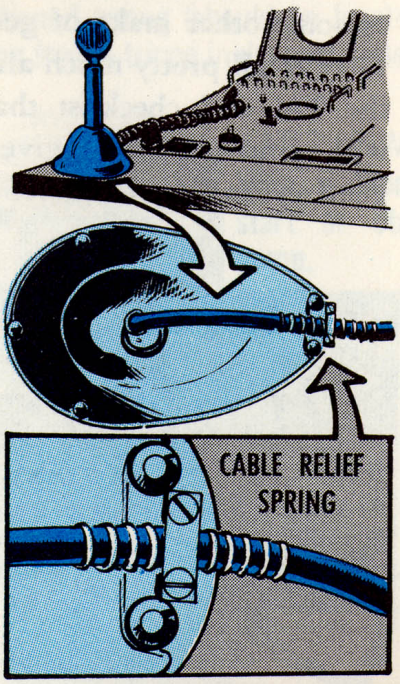
If Communications Control Set AN/FSW-8(V) is your baby, here's something you can do to head off a little trouble.

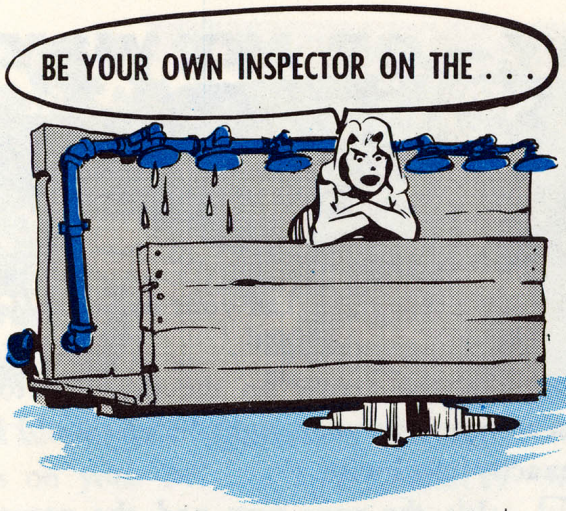
The cables for the desk microphones M-110/U have been known to break where they enter the mike stands.

A standard cable relief spring on each cable at these points will work wonders. If you can't lay your hands on a couple springs that'll do the job, FSN 5975-030-3026 will get you Protector, electrical cable, from your support unit.

You may have to make the cable inlet holes to the mike stands a little bigger in order to get the springs in. You can do this with a small, round file.

You can use the original cable clamps to hold the relief springs in place.





8-SH

The only thing more 'barrassing than getting caught under an M-1958 shower that won't work is to be the guy responsible for such a revoltin' development.

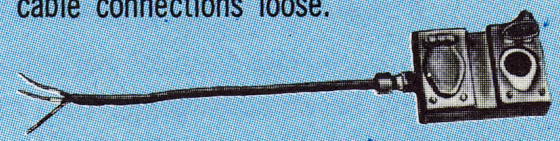
Here're some bare facts to help keep your buddies rosy-cheeked and smiling. Use 'em when doing your daily PM according to the checklist in Change 1 (May 62) to TM 10-4510-201-10 (Jan 60).

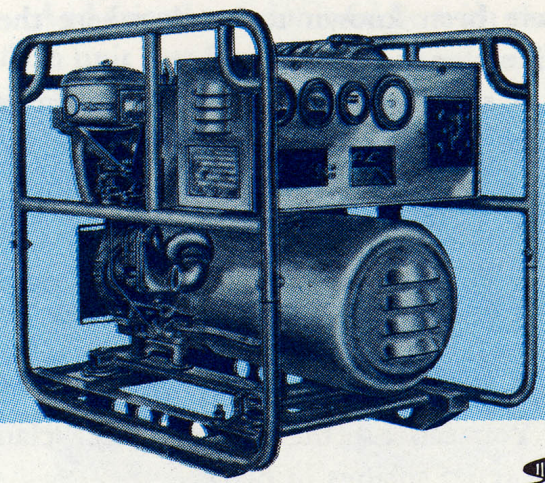
Eyeball the units one at a time —generator, pump, burner and shower stands—to see that everything's OK. Then tell your mechanic about any defects you find underlined here in **blue type.** But fix the rest yourself—soonest.

Generator

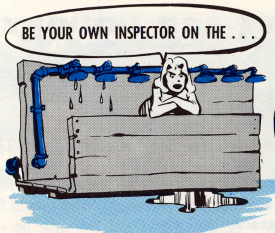
Could be that your bath unit takes an Onan or Hollingsworth or some other make of generator. They're all pretty much alike. Use the TM and checklist that came with your unit and give a real good eyeballing to these:

OUTLET BOX—**Cover missing, broken;** cable connections loose.





GENERAL APPEARANCE—Mounting bolts, nuts and screws loose; fuel and oil levels low; fuel lines, connections loose, **leak;** instruments loose, **don't work, lenses cracked, broken; electrical terminals broken; wiring frayed, worn, cracked; starter rope worn, frayed;** air cleaner dirty, needs oil.



8-SHOWERHEAD BATH UNIT

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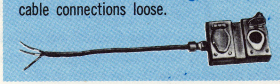

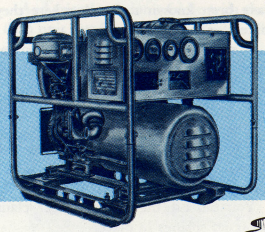

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General

OVERALL SETUP—**Poor location** (See Fig 13 in operator's TM); area trashy; equipment dirty, greasy, not on the level; **parts missing, broken; welds broken; instruction plates missing, unreadable; cables and hoses cracked, worn,** not connected right; **fuel and water leaks.**

PUBS AND FORMS—Missing, unreadable, wrong. (Should have DA Form 2404 and log book with authorized inserts as listed in Appendix II of TM 38-750, TM 10-4510-201-10 w/change for bath unit and applicable TM 5-6115- for generator unit.)

BASIC ISSUE ITEMS—Missing, broken. (Check what you have against the BIIL in Appendix II of operator's TM.)

SAFETY HAZARDS—Generator not grounded, too close to heater and shower stands; fire extinguisher missing, **won't work.**

See inside covers of TM's for complete list of hazards—and don't forget to purge the burner before lighting up.

Water Pump

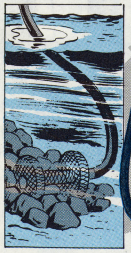
GENERAL APPEARANCE—Mounting bolts loose, **broken welds, leaks;** electric motor loose; pump needs priming. (Just pour a pail of water in the prime port.)

DRAIN PLUG AND COCK—Drain loose; cock open; **nuts and threads worn.**

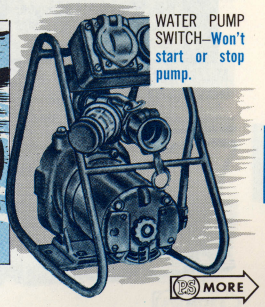
Check the drain cock again after operation to see that it works OK. You want to leave it open when not in use.

HOSES—Rubber suction hose from water supply clogged, **cracked, broken, leaks;** canvas discharge hose to water heater **cracked, broken, leaks; quick-coupling couplers badly burred; gaskets missing, spongy, worn, leak.**

SUCTION LIFT—Too high (shouldn't be more'n 10 feet): strainer and hose clogged, **broken, cracked;** connections to hose loose; strainer positioned wrong (should be located on mound of stones or hung from a tripod in deepest water, like Para 9 says).



WATER PUMP SWITCH—**Won't start or stop pump.**



PS MORE

WERHEAD BATH UNIT

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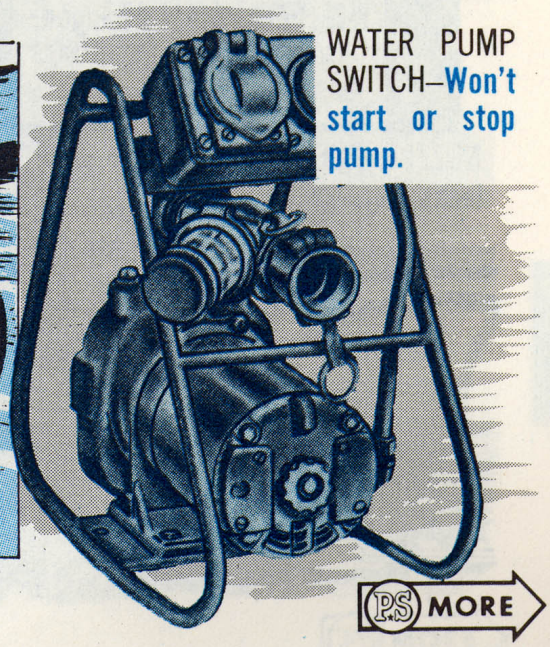
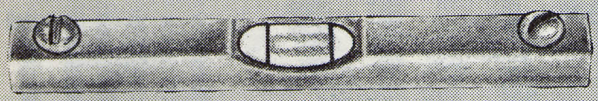


WATER PUMP SWITCH—**Won't start or stop pump.**

PS MORE

LEVEL—Mounting screws loose; glass broken; bubble stuck.



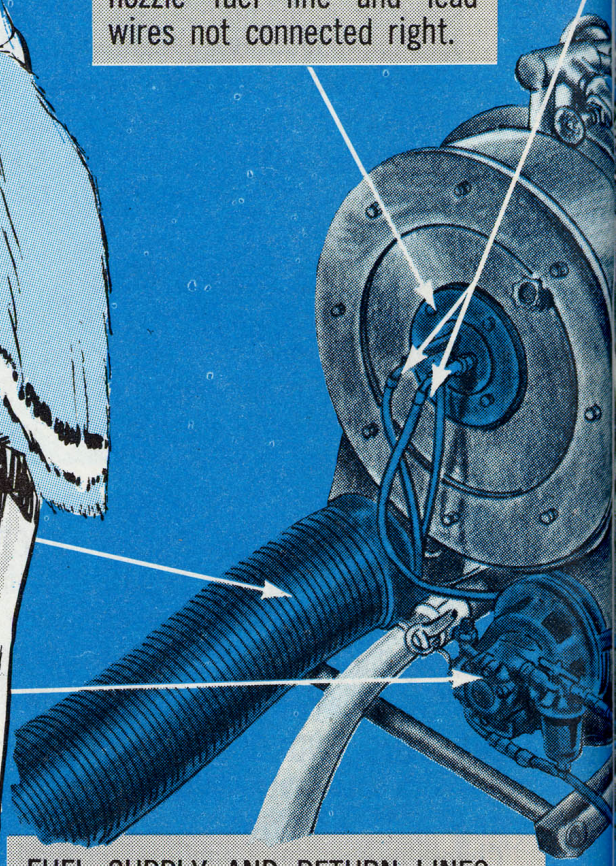
GENERAL APPEARANCE—Mounting bolts loose; **welds broken;** lines, hoses, ducts, pipes, cables and wiring beat up, loosely connected; **fittings cracked, leak; bail handles broken,** loose.

FUEL PUMP—Needs priming; **cracked, leaks;** mountings loose; fittings dirty, **cracked, broken; bracket cracked,** loose; filter loose, dirty; fuel supply and return lines **leak,** not connected right.

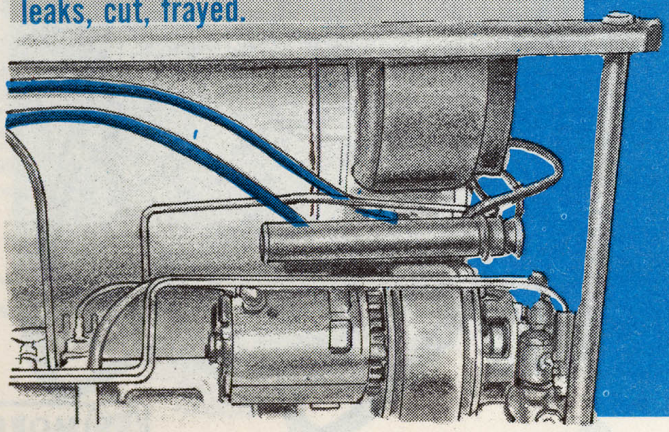
EXHAUST DUCT—**Broken,** loose, **leaks.**

BLOWER—**Housing cracked,** loose; **blower wheel damaged, out of kilter; shutter lever damaged;** blower motor mountings loose.

BURNER—Not lit (look in sight combustion tube while operating); sight glass cracked, broken; **burner head cracked,** loose; electrode and nozzle holder loose, **cracked; smokebox cover broken, cracked,** not sealed tight; nozzle fuel line and lead wires not connected right.



NOZZLE FUEL LINE—Loose connections, **leaks, cut, frayed.**



FUEL SUPPLY AND RETURN LINES—**Cracked, broken,** kinked, **leak.**

HEATER VENT—Cracked, broken welds.

LOWER MANIFOLD—**Cracked, leaks,** connections loose.

LEAD ASSEMBLIES—Loose, frayed, **broken, cracked.**

CONDUIT TUBING—**Cracked,** loose.

TRANSFORMER—**Burnt, wet; insulators cracked;** mounting bolts loose.

Water

LEVEL—Mounting screws loose; glass broken; bubble stuck.

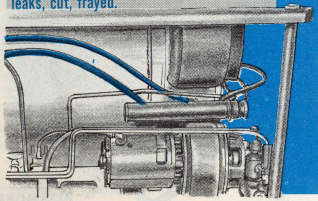
GENERAL APPEARANCE—Mounting bolts loose; **welds broken;** lines, hoses, ducts, pipes, cables and wiring beat up, loosely connected; **fittings cracked, leak; bail handles broken,** loose.

FUEL PUMP—Needs priming; **cracked, leaks;** mountings loose; fittings dirty, **cracked, broken; bracket cracked,** loose; filter loose, dirty; fuel supply and return lines **leak,** not connected right.

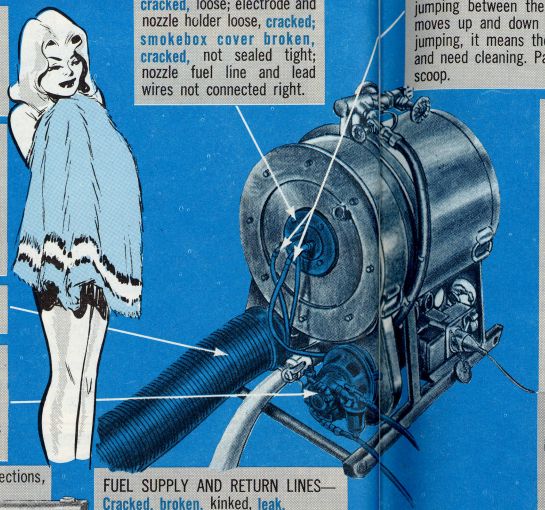
EXHAUST DUCT—**Broken,** loose, **leaks.**

BLOWER—**Housing cracked,** loose; **blower wheel damaged, out of kilter; shutter lever damaged;** blower motor mountings loose.

NOZZLE FUEL LINE—Loose connections, **leaks, cut, frayed.**



BURNER—Not lit (look in sight combustion tube while operating); sight glass cracked, broken; **burner head cracked,** loose; electrode and nozzle holder loose, **cracked; smokebox cover broken, cracked,** not sealed tight; nozzle fuel line and lead wires not connected right.



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TRANSFORMER—**Burnt, wet; insulators cracked;** mounting bolts loose.

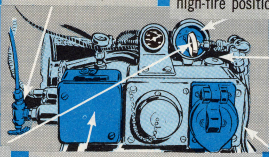
Heater

ELECTRODES—**Don't spark right;** sight glass cloudy, cracked.

Squint through the ignition sight glass while operating. There should be a continuous spark jumping between the electrodes. If the spark moves up and down the electrodes instead of jumping, it means they're covered with carbon and need cleaning. Para 35 of the TM has the scoop.

WATER PRESSURE LINE DRAIN VALVE—**Handle broken,** bent; **housing cracked, leaks; won't work.**

Check while operating. If the unit doesn't cut off automatically when the water gets hotter'n 120 degrees, turn the fuel control valve clockwise and the water blender valve counterclockwise. This will reduce the supply of fuel to the burner.

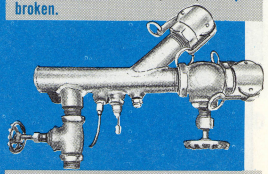


FUEL VALVES—Control and shutoff valve handles **broken, cracked,** too loose or tight; **don't control flow of fuel to burner** (check while using).

PRESSURE & TEMPERATURE CONTROL—**Housing damaged,** screws loose, **won't work.**

It should automatically keep the burner from being fired till water's in the heater, and should shut off the fuel supply if water gets too hot . . . like, say, over 120 degrees.

UPPER MANIFOLD—**Cracked;** pressure, temperature and temperature gage line connections loose; blender and shower hose connections loose, leak; **clamps broken.**



BLENDER & SHOWER VALVES—**Handles broken;** leak, **cracked,** too loose or tight; **don't control flow of water to shower stands.**

FUEL SUPPLY—Low; drum damaged; barrel plug loose, dirty; **pipes damaged, rusty;** adapters loose, dirty.

GAGES—Lenses cracked, **broken;** gages loose, **register wrong.**

Temperature gage should be between 90 and 105 degrees for normal operation. Fuel pressure should be 5 lbs when control valve is set in low-fire position and 100 lbs in high-fire position.

SOLENOID VALVE—**Damaged, won't work.** (Check while using. It should automatically regulate flow of fuel to burner nozzle.)

SWITCHBOX—**Housing damaged,** plug cap missing, broken; chain broken; **cable cracked,** not connected right; **switch damaged, won't work.**

PS MORE

Heater

ELECTRODES—**Don't spark right;** sight glass cloudy, cracked.

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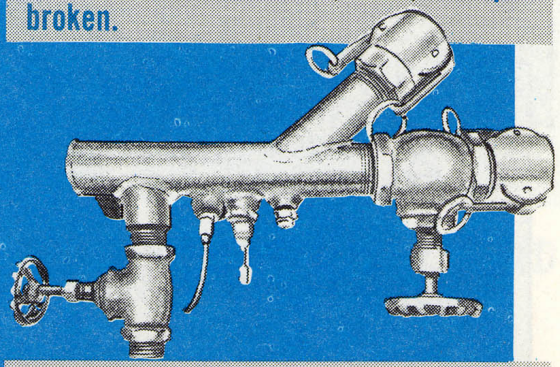

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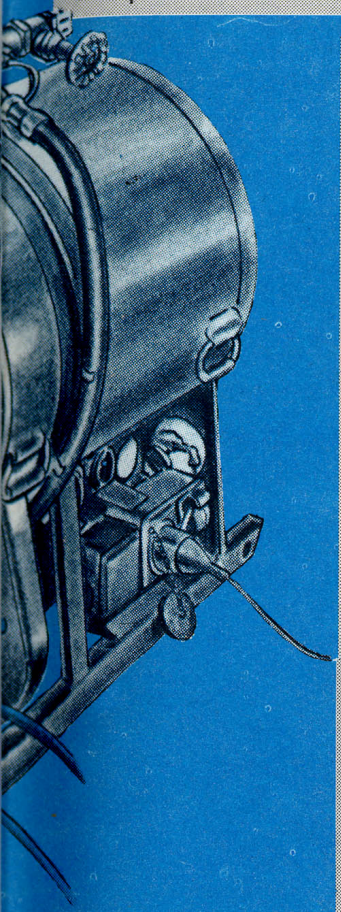

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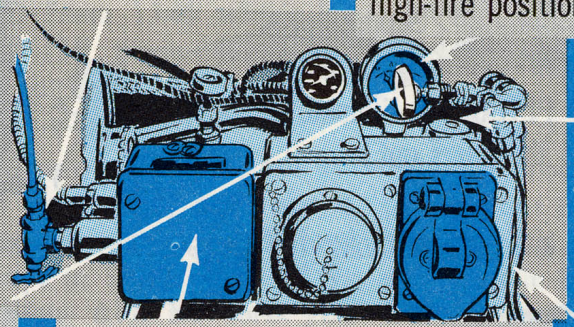

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SWITCHBOX—**Housing damaged,** plug cap missing, broken; chain broken; **cable cracked,** not connected right; **switch damaged, won't work.**

P.S. MORE

Shower Stands

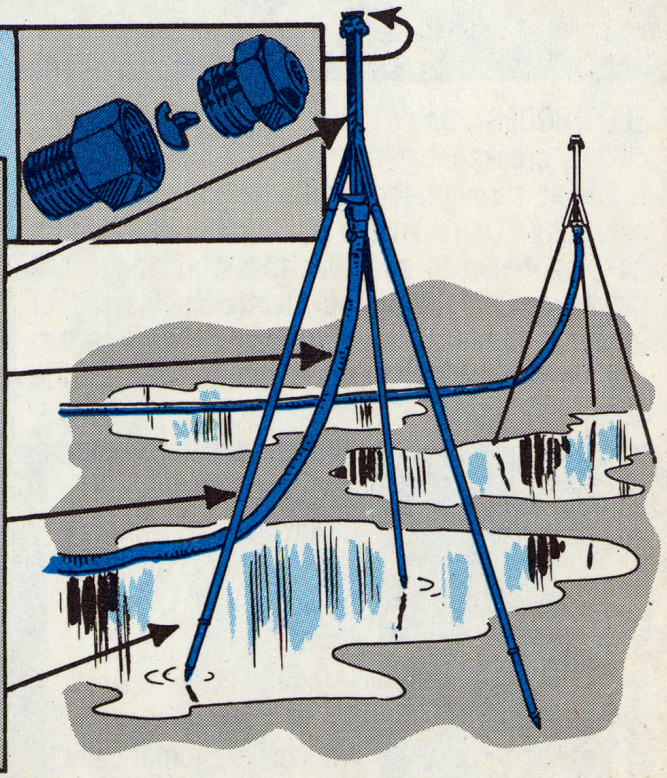
NOZZLES—Openings clogged; loose, **don't work right; inserts bent,** threads worn, crossed.

RISERS & HEAD ASSEMBLIES—Dented, **broken,** clogged hose and nozzle openings; leg sockets dirty, **welds broken;** soap trays damaged.

CANVAS HOSES—**Cracked, broken, cut,** kinked; **couplers damaged,** loose; gaskets worn, missing.

LEGS—Dented, **cracked,** bent, dirty, need paint; **foot castings damaged,** not set level.

LOCATION—Poor drainage. (Used shower water should be drained away from water source either naturally or by ditch-digging.)

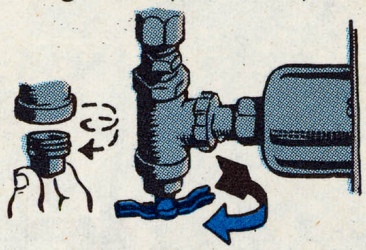


Unusual Conditions

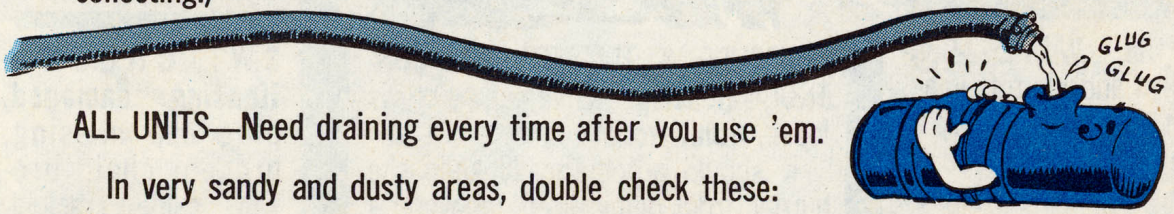
Your bath unit'll need "mostest" PM when you're operating in very cold or sandy and dusty areas. When the freeze is on, set up your outfit in a heated shelter, if you can, and pay special attention to these:

PIPES AND HOSES—**Pipes, joints, connections and valves broken; hoses cracked.** (Keep hoses off frozen ground as much as possible, using boards, branches, etc.)

DRAIN VALVES AND PETCOCKS—Closed, plugs in. (Leave 'em open and the plugs out.)



FUEL TANKS—Fuel low. (Keep tanks full as possible to keep moisture from collecting.)

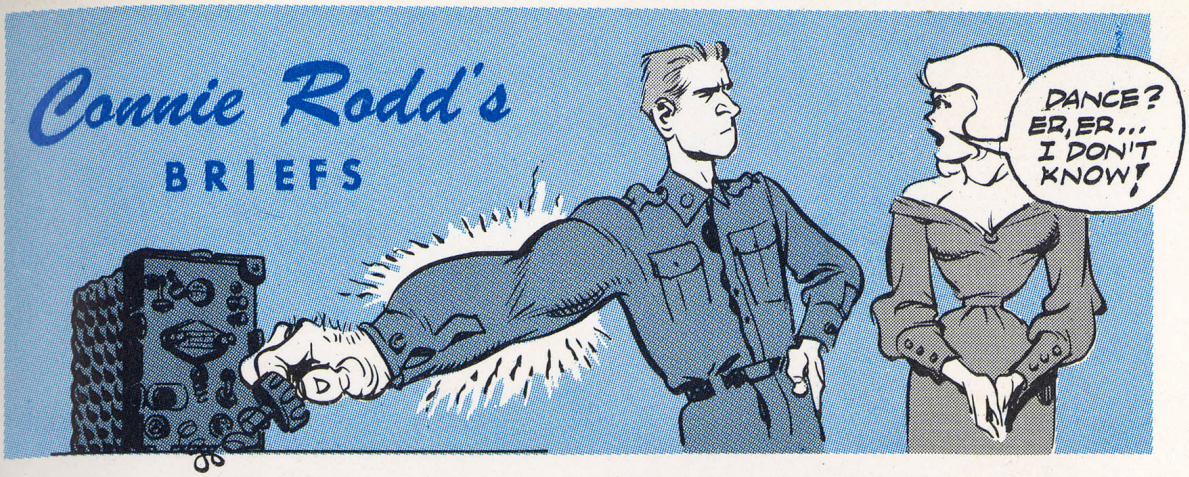


ALL UNITS—Need draining every time after you use 'em.

In very sandy and dusty areas, double check these:

WIRING AND CONTROLS—Covers loose, wires uncovered. (Cover up good for protection.)

FUEL CONTAINERS—Uncovered. (You gotta protect 'em every minute.)



HOOK-UP

The word has been out for some time that SB 9-203 (30 Mar 62) will get you directional signal lights for your military design transport vehicles via local procurement. What some people don't know is that this same SB also gives some technical dope on how the lights are hooked into the vehicle's wiring system. So, before doing a hook-up job give this supply bulletin a close going over.

HEAP SUPPLY

You're to give your supply support outfit a DA 1546 (request for issue and turn-in) even for stuff that's to be cannibalized. That's the form supply needs for its cannibalizing work. (See AR 711-16 par 85b, Change 4). Now you can just line out DD Form 1149 where it's mentioned in PS 119, page 39.

STRIP 'ER FIRST!

So you got a new M14 rifle, hot off the production line? Fine, but take a tip—when you strip 'er down before firing, like it says in Table 1 of TM 9-1005-223-12 (May 61), be sure you thoroughly dry the gas cylinder, piston and gas cylinder plugs before you put 'er back together. Lube gets in these forbidden places when the M14's are dipped before shipping. It's lots easier to get it off at the start—before firing turns it into hard-baked deposits!

RADIAC CALIBRATOR TS-1230/PD (FSN 6665-752-7699)

Got one around . . . ?

Keep hands-off the bloomin' thing until its **back side, frame,** and **aluminum case** are checked for contamination.

If yours checks out hot (where it shouldn't be) send a flash to:

U. S. Army CBR Agency
Materiel Requirements Group
ATTN: SMUMR-SM
Army Chemical Center, Maryland

They'll tell you how to make a wooden box (with a cover) to encase the calibrator for keeps. Once it's boxed you can handle it safely and you can use it by simply opening the cover.

RESERVE SUPPLY

Change 2 (17 Jan 63) to AR 735-35, "Supply Procedures for TOE Units, Organizations and Non-TOE Activities," is loaded with important info for you supply-types in Reserve units. For example, it supersedes Sections V, VI, VII, VIII, XII, and XIII, of your supply bible AR140-420 (Mar 61) and its Change 1. Also, AR 135-447 (17 Jan 63) supersedes Sections IX and X of AR 140-420. And—AR 140-40 (6 Feb 63) supersedes Sections I, II, III, IV, XI and XIV of AR 140-420.

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More details on page 51 of this PS Magazine

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